Police Use of Force
–
A contextual study of ‘Suicide by Cop’ within the British Policing Paradigm.

by

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CERTIFICATE OF ORIGINALITY.

This thesis is a presentation of my original research work.

This is to certify that I am responsible for the work submitted in this thesis, that the original work is my own except as specified in acknowledgments or in footnotes.

Wherever contributions of others are involved, every effort is made to indicate this clearly, with due reference and acknowledgement to the literature.

Neither this thesis nor the original work contained therein has been submitted to this or any other institution for a degree.

……
Nicholas FRANCIS

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Abstract

The phenomenon of ‘Suicide by Cop’ (SbC) may be described as a ‘high impact low probability’ type of event occurring where a vulnerable individual, with ‘lethality of means’, initiates self-destructive violent conduct. Necessary to sustain public confidence and police legitimacy, research to understand the police response to SbC is deficient in England & Wales (E&W). By understanding the theories, challenges and operational reality of mitigating a vulnerable individual’s SbC ideation, this research seeks to develop a fuller comprehension of the use of force (UoF) paradigm within an E&W policing context. Using a mixed method approach, a survey questionnaire (*n*=315) and published UoF Metropolitan Police Service (MPS) dataset (*n*=132,410) was statistically analysed. Comparing MPS TASER and authorised firearms officer’s UoF, this research analyses the response, effectiveness and limitations of policing high-risk persons. The findings indicate the sample response to a ‘high-risk’ person is statistically similar, implying a minimal difference in decision making or application of force. The influence of training appears a factor in mitigating threat or risk and the proficiency of any response. This research indicates that firearms officers enhanced training conditions a ‘primed’ response, reducing cognitive burden and enabling the use of other de-escalation tactics. This thesis argues the occurrence of SbC or similar averted ‘near miss’ type incidents is not measured and is reliant on post-incident investigations to improve operational practise. This research concludes implying the mode of arming and use of force paradigm within an E&W context may innately restrain police use of fatal force.

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Glossary.

ABD	Acute Behavioural Disorder.
AbS	Assaulted by Subject.
AFO	Authorised Firearms Officer.
AwW	Assaulted with Weapon.
ARV	Armed Response Vehicle.
CTSFO	Counter Terrorist Specialist Firearms Officer.
E&W	England and Wales.
IF	Impact Factor.
IOPC	Independent Office for Police Conduct.
IPCC	Independent Police Complaints Commission (*former IOPC title*).
MPS	Metropolitan Police Service.
NZ	New Zealand.
PC	Primary Conduct.
PCA	Police Complaints Authority (*former IPCC title*).
PMI	Person with Mental Illness.
RfF	Reason for Force.
SbC	Suicide by Cop.
SCO19	MPS Specialist Firearms Command
STTO	Specially Trained TASER Officer.
TASER	Thomas A. Swift Electronic Rifle (*abbreviation*).
TSG	Territorial Support Group.
TwW	Threatened with Weapon.
UK	United Kingdom.
UoF	Use of Force.
USA	United States of America.

Introduction

The aim of this research is to broaden current academic understanding of a unique and complex area; where a vulnerable individual may pose a substantial risk or threat to himself or another and there is a requirement for the police to intervene or potentially use lethal force.

Necessary to sustain public confidence and police legitimacy, it is essential that any fatal police shooting is thoroughly investigated. The phenomenon of 'Suicide by Cop' (SbC) may be described as a 'high impact low probability' type of event and occurs where a vulnerable individual, with 'lethality of means', initiates self-destructive violent conduct. This may either be conducted purposefully or with indifference to the circumstance and as a direct consequence police may have to use lethal force. Research to understand the police response to the SbC phenomenon is deficient in England & Wales (E&W) and any subsequent use of force to a vulnerable or 'high risk' individual will always be considered contentious. This thesis examines context and uses the findings to comprehend the response, effectiveness and limitations of policing high-risk persons. Using both TASER and authorised police firearms officers who have received enhanced conflict resolution training, this research compares and contrasts qualitative responses, validating and critically analysing these against reported 'use of force' (UoF) data. By understanding the theories, challenges and operational reality of mitigating a vulnerable individual's SbC ideation, this research seeks to develop a fuller understanding of the UoF paradigm within the E&W policing context.

It is estimated that globally almost one million people committed suicide in 2014 (Samaritans, 2016; World Health Organisation, 2016). Where a vulnerable individual commits suicide, it may be described as a 'hidden' event, as it frequently conceals much of the context and societal or demographic disparities. Suicide statistics are not centrally collated in the United Kingdom (UK), creating discrepancies in data accuracy and any subsequent use of it. It is estimated that 6,122 UK citizens committed suicide in 2014. Where the rate per 100,00 population is used to characterise population sizes and regional variations, the published suicide rate[1] was 5.2 for women and 16.8 for men (Samaritans, 2016). Acknowledging the number of

[1] Data collated in 2014 published for England, Wales and Republic of Ireland per 100,000 population.

individuals committing SbC is likely to be very small within E&W, this type of incident may present long-term consequences for police legitimacy. Any post incident investigation, review or inquiry will scrutinise the whole event to identify if this fatal encounter may have been prevented. This coronial process may include public health and adds to the layers of scrutiny to identify 'mistakes'; whether operational, tactical or procedural, providing some public reassurance that the police and other public services are being held to account.

1.1 Extant research.

Most of the academic research on SbC originates in the United States of America (USA) e.g. Lord (2000, 2001, 2012, 2014), Hutson *et al.* (1998), Mohandie and Melot (2010, 2011). With limited studies in other westernised countries[2] and only one in E&W, the extant research is significantly biased to the policing and cultural context of the USA. The extant literature appears incapable of clarifying if SbC occurs in other countries, the scope of any particular SbC issue or any basis for this apparent restriction to westernised nations.

Considerate of the research and situational context in the USA; this thesis examines the theories, concepts and challenges presented by SbC, to develop a literal framework and broaden understanding. Societal change, social bonds and personal strain are analysed alongside suicide rates and motivational typology. The multitude of definitions[3] and approaches to theorise suicide have restrained research and progression. This thesis deliberates Coronial verdicts and suicide recording, which may subsequently bias UK and global data (Silverman, 2006; Tollefsen, Hem and Ekeberg, 2012, World Health Organisation, 2016). The literature suggests the absence of adequate studies to characterise SbC, combined with a lack of international consensus, appear to have stalled development of operational practise and policy to protect vulnerable individuals.

Considering the extant research, this thesis deliberates suicidal risk factors and the relationship mental health or suicidal ideation has upon completed suicides (Kesic, Thomas and Ogloff, 2010, Samaritans report, 2016). The reliance on post-incident fatal SbC data is discussed, with the subsequent influence upon hypotheses being

[2] Excluding USA, only other published SbC research originates from Australia, Canada or Germany.
[3] World Health Organisation (2016) identifies twenty-seven differing suicide typologies.

developed from potentially biased data. To enable a broader comprehension of the police use of force within E&W, this research thesis discusses apparent gaps in international peer reviewed studies that may avert a potential SbC e.g. de-escalation or a 'restraining' of the use of lethal force.

The existing SbC theory, literature and research that are currently used to determine suicidal intent is considered. There is a multidimensional relationship between a vulnerable individual in acute crisis, the influence of complex risk factors, any situational or behavioural indicators and their 'lethality of means'. Where police respond and use lethal force to mitigate a situational threat, this thesis examines the extant post-incident research to establish an evidenced based method and determine 'hidden' suicidal intent.

Contrasting the complex means used to commit suicide or SbC, this thesis compares specific risk factors and their influence upon any interaction with responding officers. By evaluating a subject's 'hidden' actions, whether intentionally confrontational, indifferent or irrational; it assists in establishing a post-incident sequence of behaviour that may subsequently explain the intent of the suicidal person at the time of death. Using a number of complementary methods, this thesis studies the demographic range of realised suicides and the risk factors that could potentially be utilised to identify vulnerable individuals who may be considering SbC. The challenge faced by police responding to a vulnerable individual focused on SbC ideation, creates its own significant operational dilemma. This thesis contrasts the complex decision-making dilemma for police, who respond to an incident without adequate information relating to their specific risk factors, intention or lethal capability.

The situational context in E&W, role and method of policing is explored and the influence this may have upon the outcome of a SbC. Critically analysing the considerable amount of US-led SbC studies and contrasting this to E&W policing context; this thesis examines the resultant effect that context, policing style or mode of arming may have upon outcome. By examining the 'restraint paradigm' it critically analyses how E&W policing legitimacy is sustained within an unarmed paradox. Analysing international studies, this thesis argues there is a global dearth of research to understand SbC. Further, through examining cognitive decision-making, it will explore the limitations or operational consequences for responding officers to

mitigate the capability, threat or risk presented by a vulnerable SbC individual. As a consequence of training and operational exposure, it is argued police responders become 'recognition primed'. This increases their intuitive ability to recognise SbC factors and where possible utilise other options to restrain or negate the necessity for resorting to lethal force.

1.2 Research thesis

This thesis contains eight chapters. The second chapter reviews the relevant extant literature relating to suicide, examining the theories for SbC or intent, with contextual examination of police decision-making and response to a person in mental health crisis. The third chapter explains the mixed methods approach used in this thesis and research to examine and understand the main research question:

RQ1: 'How does a Authorised Firearms Officer (AFO) compared with an unarmed Specially Trained TASER Officer (STTO) differ in 'conflict' decision making?'.

Exploring the differences in decision-making and resolution tactics, this research aims to develop a broader understanding of how police officers in E&W deal with conflict. A sample was drawn from Metropolitan Police Service (MPS) Specially Trained TASER officers (STTO) and comprises of two sub-groups; 'unarmed' STTO and AFO's[4]. This research analysed and compared the sample sub-groups to establish if there was any difference in decision-making or use of force applied to a person with mental illness (PMI). Quantitative analysis of MPS Use of Force (UoF) data (*N*=132,410) examined the tactical approaches utilised by the sample sub-groups and to inform the construction of a scenario-based survey questionnaire (*N*=315). A supplementary research aim was to understand if there were specific tactics, techniques or approaches used for to de-escalate conflict with vulnerable high-risk individuals.

The fourth chapter examines the findings of the quantitative MPSUoF dataset and the research survey questionnaire. This provides a qualitative perspective to the MPSUoF data, exploring and defining the officer's role specific assessment of incidents. Chapter five discusses the findings from both the qualitative and quantitative data. Using relevant literature, it examines the STTO and AFO role

[4] As part of the MPS STTO population, AFO's are trained and routinely issued TASER as a 'less lethal option'.

related decision-making processes and to add context compares this against the research survey questionnaire or MPSUoF data. The last chapter concludes, summarising the research to draw some recommendations for future consideration or study.

The next chapter contains a literature review, which will critically examine the extant suicide research, analyse the SbC theories focusing on the subject's intent and the E&W police response to a person in mental health crisis.

2. ‘Suicide by Cop’ –theories, taxonomy and challenges

This chapter will critically consider the hypotheses, classifications and academic issues surrounding ‘Suicide by Cop’ (SbC). Examining the extant research this chapter this evaluates challenging topic and how this may have influenced conceptualisation of this unusual and extreme policing phenomenon. Where a person may use police as a proxy to enable suicide, the formative theory of ‘Victim Precipitated Homicide’ (Wolfgang, 1957) has been progressed by understanding key indicators, but has also been constrained by an inability to classify it.

In considering the extant literature, a knowledge gap for policing in England and Wales (E&W) emerges. Existing SbC research largely consists of post-incident case studies, this influenced the methodology and aims for this research thesis. By using a mixed method approach, this research aims to bring context and develop understanding of the use of force within the E&W policing paradigm. By analysing police data and survey questionnaire, it develops an understanding of the range of operational and use of force responses to a vulnerable person in crisis.

2.1.1 Suicide hypothesis and its restrictions

To develop a fuller understanding and give context, it is useful to briefly evaluate the research literature on suicide. Durkheim (1897) defines suicide as ‘death resulting directly or indirectly from a positive or negative act of the victim himself, which he knows will produce this result’ (Durkheim, 1897 (1951), p. 44). More recently it has been described as ‘an act deliberately initiated and performed by a person in the full knowledge or expectation of its fatal outcome’ (Pillay and Thomas, 2015; World Health Organisation (WHO), 2016). Almost 120 years after Durkheim’s (1897) formative hypothesis, the descriptive WHO statement highlight some of the core issues contemporary society is still experiencing when trying to classify suicide.

Durkheim (1897) examined how a combination of personal motivational factors may interact on an individual’s path to suicide, theorising four wide motivational classifications (Durkheim, 1897; Lankford, 2013; Lord, 2010; Parent and Verdun-Jones, 1998). Defined as a ‘fatalistic’ suicide, where an individual is motivated as they face inescapable suffering, wish to avoid persecution or some form of

discomfort. Where an individual lacks purpose, direction, or a function within society, have no social standing or responsibility and therefore struggle to integrate into that community; this belief of insignificance combined with an inability to assimilate within society may diminish their confidence and consequently increases the probability of an anomic suicide (Durkheim, 1897; Lankford, 2015a; Parent and Verdun-Jones, 1998). Durkheim (1897) suggests that the purpose of social networks acts as an influence and standardises a person's emotional characteristics, therefore preventing social disconnection and separation. It theorised that egoistic suicides are caused when, without these social systems, a person is susceptible to 'depression or disillusionment' (Lankford, 2013, pp. 256). Lastly, 'altruistic suicides' are motivated by a personal conviction that the collective need is larger than an individual one e.g. a person who may be compelled by their belief to commit suicide.

Exploring Durkheim's (1897) theory, there appears a correlated link between suicide and societal change. Suicide may be considered as a coping mechanism to overcome personal strain created by individual or societal context; the unattainable aspirations or disparity created by a need for physical possessions, kinship, the absence of communal integration, authority or achievement (Durkheim, 1897; Merton, 1957; Lord, 2010; Samaritans, 2016; Schneiderman, 1998; Parent and Verdun-Jones, 1998). This appears to corroborate the wider typology of egoistic altruistic, fatalistic or anomic suicides.

Fundamentally, by making a positive commitment and decision to take their own life, suicide is a deliberate act (Durkheim, 1897; Lord, 2000; Parent and Verdun-Jones, 1998; Pillay and Thomas, 2015). Extant research has generally focused on the behavioural characteristics of suicide. There is limited analysis focused on suicidal ideation and the significance of how particularly complex risk factors influence an individual's intent (Kesic, Thomas and Ogloff, 2010, 2012; Lord, 2010; Parent and Verdun-Jones, 1998). A variety of risk factors appear to influence the conversion of suicidal ideation into realisation, these include; substance misuse, certain mental health conditions, the regularity of prior suicide attempts, personality disorders, emotional crisis or life events e.g. absence of social ties or emotional stability (Best, Quigley and Bailey, 2004; Booth *et al*., 2010; Kesic, Thomas and Ogloff, 2010; Lankford, 2015a, 2015b; Lord, 2000; Miller, 2007; Parent and Verdun-Jones, 1998).

In addition, a conscious commitment to take their own life, an individual requires accessibility to the means and an opportunity to commit the act. Frequent means of committing suicide, such as jumping, drowning or by substance overdose necessitate an actionable motivation to take one's own life; (Best and Quigley, 2003; Lord, 2000, 2010). Though, when considering suicide, an individual may engage in a conscious life-threatening and apparent criminal confrontation, to incite an additional party to kill them (Gebeth, 1993; Lord, 2000; Parent and Verdun-Jones, 1998; VanZandt, 1993 Wilson *et al.*, 1998). This focused and determined action means the difficult choice to die is essentially removed to another individual 'by proxy'.

The next section examines Wolfgang's (1957) theory of 'Victim Precipitated Homicide' which initiated academic debate and led to future research. Theory and understanding have been developed since, focussing on the subject and a change in emphasis from homicide to suicide.

2.1.2 Conceptualising 'Victim Precipitated Suicide'

Where a suspect had an obvious and substantial participation in a crime, and by accident, provocation or compulsion they were subsequently killed, Wolfgang (1957) hypothesised this as 'victim-precipitated homicide'. Between 1948 and 1951 Wolfgang utilised empirical data from criminal homicides (n=588) in the USA. Whilst some of the personal descriptive language within the research is derogatory, the theory of an encounter where a 'victim's' criminal conduct may be the causation in initiating his or her own suicide has shaped debate (Parent and Verdun-Jones, 1998; Wolfgang, 1957). Discussed later, subsequent research to understand the subject's intent has refined Wolfgang's (1957) definition, arguing this is not 'homicide' but instead 'suicide'.

Developing Wolfgang's (1957) original classification, Gerberth (1993) hypothesised the person's behaviour should be considered as suicidal conduct. Categorised as 'officer assisted suicide' this is completed when a person, who is resolved to realise suicidal ideation, purposely engages in a conceivably fatal criminal act to induce another to kill them (Gerberth, 1993); now colloquially termed as 'Suicide by Cop' (SbC).

However, there are some fundamental difficulties in achieving consensus for a mutually accepted taxonomy of SbC (Feuer, 1998; Geller and Scott, 1992; Noesner and Dolan, 1992). Many academics agree that SbC may follow when a person feels suicidal ideation and in spite of aspiring to die, they are incapable or unwilling of taking their own life. In this case the subject utilises another in an deliberate way, as a process or instrument, to fulfil their lethal goal (Gebeth, 1993, Patton and Fremouw, 2016; Hutson *et al*., 1998; Parent and Verdun-Jones, 1998; Sarno and Van Hasselt, 2014). Numerous terms or labels have been applied to this phenomena, including: 'Suicide by Cop' (Feuer, 1998; Gerberth, 1993; Homant and Kennedy, 2000; Kennedy, Homant and Hupp 1998; Lindsay and Lester, 2008; Mohandie, Meloy and Collins, 2009) 'police involved victim provoked shooting' (McKenzie, 2006), 'law enforcement-assisted suicide' (Lord, 2000), 'suicide by police' (Homant and Kennedy, 2000; Kesic, Thomas and Ogloff, 2010) and 'victim precipitated homicide' (Wolfgang,1957).

Early research papers labelled the suicidal individual as a 'victim', however the participant's roles within the encounter may actually be reversed. Additionally, this 'victim' label may not be appropriate in this unique type of incident, as this may also make the responding officer a 'suspect'. By labelling one character a 'victim' this commonly has affirmative, compliant or susceptible value; whereas a 'suspect' or 'offender' similarly has negative implications, such as fear, hazard or danger (Holstege *et al.*, 2009; Homant, Kennedy and Hupp, 2000; Wolfgang, 1957; Patton and Fremouw, 2016). This thesis will use the contemporary neutral term 'subject', 'person' or 'deceased' (Holstege *et al.*, 2009; Patton and Fremouw, 2016).

2.1.3 Variances within SbC research

SbC research overlaps multiple disciplines including law, mental health, law enforcement and criminology; and is a contributory factor for the variety of incompatible and overlapping classifications or conflicting terms. Restricting any beneficial or progressive dialogue on suicidal behaviour there is a reliance on selected hypotheses that contain a negative inferences or out-dated terminology (Azizi, 2010; Lord, 2000, 2010; Patton and Fremouw, 2016; Pillay and Thomas, 2015; Sarno and Van Hasselt, 2014; Silverman, 2006). It appears the failure to establish a practical or universally established SbC definition has restrained accurate comparative studies to gauge the true global scale of SbC (Azizi, 2010; Pillay and Thomas, 2015).

As each discipline uses different research methodologies or has objectives concentrated within their own field, additional complications in theorising SbC have been created (Patton and Fremouw, 2016). It appears SbC theory has not been meaningfully widened, developed or expanded for some significant period; with the lack of consensus adding to the considerable challenges that exist in researching this problematic subject (Azizi, 2010; McLeod, Thomas and Kesic, 2014; Patton and Fremouw, 2016; Sarno and Van Hasselt, 2014).

2.1.4 SbC case studies, limitations and burden of proof

Researching historic case studies, academics have been striving to improve the SbC criteria and identify commonalities. A significant number of qualitative and quantitative studies (Appendix A) have studied the environmental influences, behavioural markers, the rates of occurrence and dynamics within SbC incidents (Patton and Fremouw, 2016). This thesis is dependent upon international research to draw knowledge and valuable understanding. Whilst the only two E&W based peer reviewed SbC studies (Best and Quigley, 2003; Best, Quigley and Bailey, 2004) offer valuable context, this research was restricted by the small number and availability of case studies within E&W.

Although the ‘Suicide by Cop’ term was often used within the law enforcement circles, early studies were unable to calculate the regularity of SbC occurrences

(Gerberth 1993; Homant, Kennedy and Hupp, 2000; Van Zandt, 1993). When Parent and Verdun-Jones (1998) studied Canadian police lethal shootings (*n*=58) in establishing 'victim-precipitated homicide' theory they concurred with Gebeth (1998) hypothesising '[….] the initiator is a direct, positive precipitator of his or her own death' (Parent and Verdun-Jones, 1998, p. 22). A study of US shootings (*n*=437), classified 10.5% (*n*=46) of the sample as SbC encounters, identifying particular characteristics and intent of the subject (Hutson *et al*.,1998).

Arguably, SbC occurs when 'a suicidal individual intentionally engages in life-threatening and criminal behaviour with a lethal weapon or what appears to be a lethal weapon towards law enforcement officers or civilians to specifically provoke officers to shoot the suicidal individual in self-defence or to protect civilians' (Hutson *et al*., 1998, p. 665). To stimulate a predicted lethal police response, initial research hypothesised the subject either threatened the officer or transferred their malice towards another, but without actually putting any person in danger (Van Zandt, 1993). Where suicidal individual's use 'words or gestures or they confront the police with a dangerous weapon despite having no way to escape, virtually forcing the officer to shoot' this may assist in establishing intent (Kennedy, Homant, and Hupp, 1998, pp. 22; Lord, 2000).

Including particular behavioural elements may enable a classification of intent e.g. pointing a weapon towards captives and aiming, charging or throwing weapons at responding police officers (Lord, 2000). Lord (2000) applied a different SbC criteria to Hutson *et al*. (1998), with law enforcement officers self-selecting previous US police shootings (*n*=64) they believed met the research criteria. Critically, there were limitations with this study created by the variations in police procedures, documenting, deployment practices and self-selection bias. While the size of this sample may not be large enough to permit any reliable extrapolation of the SbC data, this study creates a hypothesis to develop knowledge to infer an individual's intent.

Increasing the SbC research criteria, has permitted a consideration of the broader situational context, with a focus on the behavioural interaction between the police and subject to improve an understanding of suicidal ideation (McKenzie, 2006; Pinizzotto, Davis and Miller, 2005; Pinizzotto *et al*., 2012). To realistically progress

SbC research, a clear consensus with a recognised assessment criteria to classify suicidal intent is required (McKenzie, 2006).

Existing research is generally limited to descriptive case study analysis of suicide and SbC. Recognised by several studies, SbC is challenging to methodically examine, which may be responsible for the lack of international research. Studies are completed on vulnerable individuals, some with complicated mental health issues; and where they complete suicide, the research is dependent on third party narratives (Pillay and Thomas, 2015). Evidential inadequacies commonly inhibit the contextual and conclusive proof required for SbC; as collating evidence from family, witnesses or even professionals who are connected or had an involvement with the subject can be problematic (Pillay and Thomas, 2015). The distressing effect of being a participant in a 'suicide by proxy' may possibly traumatise others, generating further victims (Kingshott, 2009; Van Zandt, 1993).

The UK recorded rate of suicide or SbC may not be accurately reflected within Coroner recordings of death (Pritchard and Hansen, 2015; Samaritans, 2016 Silverman, 2006). For the legal and clinical classifications, the threshold of suicide is set at the criminal burden of proof, which is 'beyond reasonable doubt'. A Coroner must be satisfied, that at the material time, the individual intended the consequence of their actions to be their own death. Arguably, by reducing the level of proof to the 'balance of probabilities' threshold, it is estimated that recorded suicides would increase between 30 to 50%, which may emphasise the true national scale of suicide within E&W (Pritchard and Hansen, 2015; Habgood, 2017). Similarly, for a potential SbC inquiry, if the subject's suicidal intent cannot be proven then a finding of 'Justifiable Homicide' or 'Lawful Killing' is made (Homant, Kennedy and Hupp, 2000; Pritchard and Hansen, 2015; Wilson *et al.*, 1998). As coronial findings of death are set within court procedures, the creation of a distinctive SbC ruling may increase public awareness or contribute to quantifying this complex issue (Atkinson, 1978; Best, Quigley and Bailey, 2004; Kesic, Thomas and Ogloff, 2010; Pritchard and Hansen, 2015; Wilson *et al.,* 1998).

2.1.5 The influence of data in defining SbC

The limited number of E&W police shootings and an absence of E&W centred research, has created a dependence on US based SbC studies (Best and Quigley, 2003). The effect of using contrasting criteria, parameters, research methods and classifications between different studies has resulted in conflicting estimations; where SbC may occur in between 16% and 46% of all US police involved shootings (Hutson *et al*., 1998; Kennedy, Homant and Hupp, 1998; Klinger, 2001; Kesic, Thomas and Ogloff, 2010; Lord, 2014; Mohandie and Meloy; 2010; Parent and Verdun-Jones, 1998). In an attempt to advance understanding and quantify the SbC issue, the US government has sought consensus to classify suicidal behaviour, standardise statistical recording and promote a thematic analysis of SbC (Azizi, 2010; Kingshott, 2009; Lord and Sloop, 2010; Lord, 2012, 2014). However, there is no established classification in existence for academics, police or the coroner to empirically determine if a homicide was a SbC (Dewey *et al.,* 2013).

The challenge of silo based SbC research approaches is characterised by each study employing a contrasting set of criteria to define SbC and then removing incidents where specific traits are not indicated. This approach reduces any sample size, lessens the ability to draw comparative conclusions and removes valuable research opportunities (Dewey *et al*., 2013; Klinger, 2001; Kesic, Thomas and Ogloff, 2010; Lord, 2014). Post-incident studies appear dependent on accessing police or public records, which may not necessarily capture all the data points required for that study. As each agency operates under a variety of systems to gather 'post incident' statistics, this may unduly influence research outcomes; resulting in incomplete and potentially unsound assumptions derived from incorrect data (Alpert, 2015; Azizi, 2010; Hutson *et al*., 1998; Klinger, 2001; Lord, 2000, 2014; Miller, 2007, 2015; Mohandie and Meloy, 2010) (Appendix B presents a number of SbC models).

Law enforcement agencies do not register 'near miss' occurrences e.g. where police de-escalate an incident and consequently avert a suicide or SbC; unless an arrest or a mental health referral is made, no official record is created (Azizi, 2010; Best and Quigley, 2003; Kesic, Thomas and Ogloff, 2010; McKenzie, 2006; Morabito and Socia, 2015; Squires and Kennison, 2010). Similarly, scholars 'do not study non-events' (Pinozzotto *et al.,* 2012, p. 286) and as research criteria tends to omit these

instances it narrows comprehension of the ‘use of lethal force paradigm’ (Pinozzotto *et al.,* 2012; Squires and Kennison, 2010). Where the police ‘restrain’ their use of force and use other tactics to avoid a fatal encounter, analysis of these ‘near miss’ incidents may increase understanding and create quantifiable data to determine best practise (Azizi, 2010; Best and Quigley, 2003; Lord, 2014; Pinizzotto *et al.,* 2012).

The dearth of scientific proof inhibits our understanding of how some police shootings are avoided and prevents scrutiny of those effective police tactics that may be used to prevent future fatal encounters (Alpert, 2015; Azizi, 2010; Best and Quigley, 2003; Kesic, Thomas and Ogloff, 2010; Lord, 2010, 2014; McKenzie, 2006; Mohandie and Meloy, 2010; Squires and Kennison, 2010). It is argued ‘potentially fatal encounters’ (Squires and Kennison, 2010, p. x) do not receive any detailed examination. To comprehend the entire context of a fatal police encounter is crucial in the prevention of future deaths. The collation and utilisation of data from fatal police shootings alone may give an unrepresentative description of the police use of lethal force.

Future studies are necessary to develop a fuller understanding of when police actually use force and provide an evidence base to verify or refute the value of employing other tactical options. In circumstances where police did not fire, exploration of approaches or techniques to reduce the influence of suicidal motivation is required e.g. giving a subject ‘time and space’ (Best and Quigley, 2003; Kesic, Thomas and Ogloff, 2010; Klinger, 2001; Lord, 2010, 2014; Mohandie and Meloy, 2010). However, where individuals are detained, survive or surrender avoiding a prospective SbC, an immediate debrief of all parties involved may secure a vital opportunity to identify and reveal best practise (Klinger, 2001; Lord, 2010; McKenzie, 2006).

The literature indicates a number of fundamental issues and when these are combined act as a limiting factor for scholars efforts to research or quantify the frequency of SbC. Underdeveloped definitions, deficiency of empirical research and imprecise data have led to an abundance of descriptive provincial studies which obscure the real magnitude of the problem (Habgood, 2017; Lord, 2000; Pritchard and Hansen, 2015; Samaritans, 2016; World Health Organisation, 2016). It is uncertain if the deficiency of research studies, literature or data has limited the normally influential effect that academics have upon law, policy or training within

public health or law enforcement; but within the existing literature the 'hidden' nature of this issue increases the vulnerability some may face.

By learning lessons from previous fatal encounters, the operational police response to prospective SbC incidents has developed over time e.g. recommendations[5] relating to the management, training, tactics and post-incident procedures (Best and Quigley, 2003). The focus of recent studies has been to conduct a contextual examination to improve understanding of the situational and behavioural interaction between the individual and the police. The next section will consider the literature concentrating on the situational and behavioural stimuli that may shape suicidal ideation.

[5] Recommendations made by the Police Complaints Authority (PCA), which is a former title of the Independent Police Complaints Commission (IOPC) and investigates police conduct.

2.2 Intent, suicide risk factors and quantifying context

The literature indicates there has been insufficient progress to define or study SbC within the UK; the resultant impact has decreased the potential influence on policy, decision-making or tactical options in a potential SbC confrontation. Police may pre-emptively use force in order to prevent a SbC or remove the individual's capability to harm. Where a subject's injuries are fatal, a comprehensive scrutiny of the subject's behavioural traits needs to be conducted in order to understand if there was any specific intent to die (Azizi, 2010; Klinger, 2001; Lord and Sloop, 2010; Lord, 2012). In an effort to validate suicidal ideation, contemporary studies now focus on the point of interaction to characterise behavioural or verbal indicators and the subject's 'rationality of thought' (Lord, 2012, 2014).

Whilst the 'live versus die' dilemma is subjective for the individual it is a significant influence on the probability of a police shooting (Kilnger, 2001). Individual motivation and purpose to die appears as diverse as human nature, proving a challenge to establish or accurately measure (Azizi, 2010; Kesic, Thomas and Ogloff, 2010; Lankford, 2015a, 2015b; Lord, 2012). Instead of limited behavioural indicators, by analysing the 'chains of behaviour' it may enhance understanding of the subject's intent within a SbC incident (Kesic, Thomas and Ogloff, 2010; McKenzie, 2006). Using data from post-incident case studies and fatal police shootings, numerous hypotheses have been established to develop and increase awareness of causation factors (Best, Quigley and Bailey, 2004; Homant and Kennedy, 2000; McKenzie, 2006; Lord and Sloop, 2010; Lord, 2012).

2.2.1 Quantifying suicidal intent

Whilst evaluating incident which may meet the general SbC typology, a US study identified a number of 'decision points' which may categorise the incident (Homant and Kennedy, 2000). For example, the encounter was a premeditated confrontation planned by the individual, where the subject presented a type of nonconforming emotionally unpredictable behaviour or they engaged in 'normal' criminal activity (Homant and Kennedy, 2000). These broad categories established the core of the 'decision tree', which may be further separated into nine sub-types (Homant and Kennedy, 2000). In a 'planned' event, a hypothetical correlation exists between the individual initiating or designing a state where police intervention is required. It is

envisaged that the ‘disturbed person’ category would include those who are intoxicated due to substance abuse, mental illness or suffering emotional crisis. The remaining category is where a subject participates in a ‘crime-in-action’ and when confronted by police and unable to escape they ‘elect’ to be killed by police.

Utilising the ‘decision tree’ creates a framework to differentiate SbC from other incidents where police have used lethal force. This study clearly illustrated the dearth of data and comparable literature available; as the limited overall sample group (*n*=145) had a restricted number of cases in each classification and utilised a range of data sources, with reliance on some unverifiable media reports (Homant and Kennedy, 2000). This typology was extended and further developed in several other studies (Best, Quigley and Bailey, 2004; Lord and Sloop, 2010; Lord, 2012). Best, Quigley and Bailey (2004) examined police shootings (*n*=22) in E&W between 1998 and 2001, with Lord and Sloop (2010) and Lord (2012) using a further revised ‘decision tree’ to analyse data (*n*=356) from the USA Hostage Barricade Data System (HBDS).

A modified ‘decision tree’ (Figure 1) may enable suicidal intent to be quantified. Combining primary evidence with behavioural, situational or suicidal indicators, may provide contextual evidence to classify a subject’s ‘indifference’ (Azizi, 2010; Lord and Sloop, 2010; Lord, 2012).

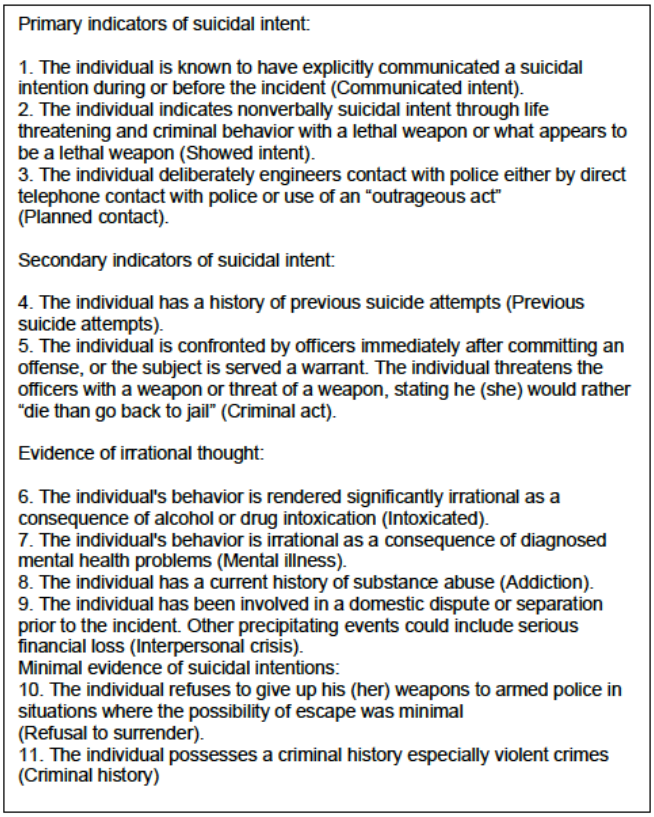


Figure 1. Modified 'Decision Tree' (Source: Lord and Sloop, 2010, p.891).

It is suggested the quantification of a person's suicidal intent should not be limited to a singular data point (Best, Quigley and Bailey, 2004; Lord and Sloop, 2010; Lord, 2012). Enlarging the number of measured behavioural, communicated or planned indicators enables a more accurate assessment to be made. The more data points met, the higher the probability of a subject's intent to manipulate police into a lethal response (Best, Quigley and Bailey, 2004; Lord and Sloop, 2010; Lord, 2012). Utilising this method, a score may be generated to establish the probability of a planned SbC and offers an opportunity to quantify vulnerability, intent or rationality. The researcher has been unable to establish if this methodology has been applied or tested upon post-incident cases studies, but this probability framework may offer future research opportunities to develop an enhanced understanding of SbC intent.

Studying vulnerable people is a complex problematic issue. This complexity increases where an individual's intent is concealed or 'hidden'; either purposely, with indifference to the consequences or, due to the effect of particular suicidal risk factors, where their behavioural actions maybe unintentional or misunderstood.

2.2.2 ‘Hidden Suicides’ - the influence of concealed intent

For some deaths that originally seem to be accidental e.g. one-car collisions or workplace fatalities, where suicidal intent is subsequently established these have been hypothesised as ‘hidden suicides’ (Homant and Kennedy, 2000; Lord, 2012). Equally, where a suicidal individual seems apathetic to the significance of their interaction with police in a potentially fatal scenario, these incidents may be considered as ‘hidden suicides’. As suicide is not completely understood, is under-reported the ‘decision tree’ (Figure 1) may assist in a comprehensive analysis to verify suicidal intent (Lord, 2012).

Lord and Sloop (2010) identified a need to recognise specific influential behavioural factors within an amended ‘decision tree’ (Figure 1) e.g. alcohol or drug intoxication, mental health crisis or interpersonal issues. These features add to ‘evidence of irrational thought’ and may negatively influence intent or clarity of thought. Arguably, in the interaction with police, a vulnerable individual who is either confused or unconsciously behaving in a manipulative manner may not rationally intend to commit suicide (Lord and Sloop, 2010). Previously classified SbC shootings could have been produced by an individual’s ‘indifference’ to death and confused or irrational conduct (McKenzie, 2006). Therefore, a subject’s response to police or an officer’s consequent reaction to the threat they pose may be situational and the individual’s actions or intentions were either misinterpreted or unintentional (McKenzie, 2006; Parent and Verdun-Jones, 1998).

Where previous studies had combined behavioural conditions, in order to develop a fuller understanding of rationality at the point of lethal confrontation, it may be necessary to further categorise instances where a subject could be influenced by alcohol, drugs or mental illness (Lord and Sloop, 2010). Utilising supplementary classifications within the data set may permit scholars to determine the influence of irrational thought and compare this with behavioural indicators of those individuals who evidently intended for the police to end their life (Lord, 2012). The influence irrational behaviour upon SbC or general self-inflicted suicides appears to be minimal and therefore, whilst acknowledging it, significant weight should not be placed upon an individual’s vague or unclear intent (Best, Quigley and Bailey, 2004; Lord and Sloop, 2010).

2.2.3 'Outrageous Act'- planning and expressing intent

By purposely initiating police contact, a suicidal individual may engage on an 'outrageous act', thereby exhibiting individual or situational features which are unique to the SbC phenomenon (Azizi, 2010; Lord, 2004, 2014; Mohandie and Meloy, 2010). In an E&W context, a practical example is a drunk and suicidal subject in mental health crisis, armed with a firearm, holds his estranged partner hostage in a house threatening her. As the subject leaves the house he points the firearm at an unarmed officer who tries to negotiate with him. Armed police locate him, point firearms and during this initial encounter the subject states he wishes to die and for police to shoot him. He is holding the firearm to the side of his leg, pointed at the ground. The subject is wearing body-armour and refuses to talk with armed police responders who are trying to negotiate with him. Not getting a reaction from the armed officers, he slowly brings the firearm towards his own temple. At this time armed police fire 'less lethal' Baton Gun and TASER at the subject. These have no physical effect and despite this the subject kills himself (IPCC, 2016). This combination of a person in extreme crisis, complex risk factors and lethal capability clearly shows the operational dilemma presented to police to safely resolve these incidents. Additionally, it also reveals the acute vulnerability of these individuals.

Homant, Kennedy and Hupp (2000) state the effect that planning has upon on completed or averted SbC cases (*n*=123) (Geberth, 1993; Homant, Kennedy and Hupp, 2000; Kennedy, Homant and Hupp, 1998; Parent and Verdun-Jones, 1996; Wilson *et al*., 1998). Developing theoretical assumptions, the threat presented by the individual was measured. Yet, the paper does not present, explain or give any description of the research methodology. However, the authors do concede the limitations of extrapolating assumptions from their restricted data set, as other features, such as demographics or risk factors may adversely influence the value of this data (Homant, Kennedy and Hupp, 2000). Homant, Kennedy and Hupp (2000) claim that 27% were carefully planned, 24% had possibly arranged the encounter and 49% appeared spontaneous; arguing that some individuals who did not plan the encounter may be measured as a 'lower danger' of completing SbC. It was further theorised, those who lacked an emotional ability perform the suicidal act themselves or who did not wish to expose others to danger, their 'purposeful' behaviour with an

unloaded or imitation weapon may provoke a lethal police reaction (Homant, Kennedy and Hupp, 2000).

Equally, a desperate individual may unsuspectingly have the capability to harm. Arguably, that individual should not be eligible to preferential treatment even if, as may be determined in a post-incident investigation, there is no substantial capacity for them to pose a hostile threat (Kesic, Thomas and Ogloff, 2012; Klinger, 2001; Ogloff *et al*., 2013). Similarly, although an individual with an unloaded or imitation weapon is unable to actually present a viable threat, a post-shooting inquiry may recognize a legally reasonable 'mistake' made by the officer (Klinger, 2001). This stance concurs with Wolfgang (1957) initial 'victim-precipitation' theory; where an individual's hostile acts may require officers to respond in an honest belief with potentially lethal force, even though it may subsequently be discovered the subject presented no viable risk (Homant, Kennedy and Hupp, 2000; Klinger, 2001).

In hiding suicidal intent, through implying or perpetrating a criminal or homicidal act, an individual may anticipate police to respond with potentially lethal force (Azizi, 2010; Durkheim, 1897; Klinger, 2001; Lord, 2004, 2014; Mohandie and Meloy, 2010). It may be suggested that in completing or intimating this 'outrageous act' it reveals a clarity of thought; where any behavioural, verbal or planning indicators may be additional evidence of suicidal intent (Kesic, Thomas and Ogloff, 2010; Klinger, 2001; Lord and Sloop, 2010; Lord, 2012; Mohandie and Meloy, 2010). This hidden causal association between homicide and suicide can be reproduced in varying conditions e.g. a suicidal person wishing to die rather than face imprisonment or intentionally threatening others to provoke a conflict requiring police use of lethal force to protect another life (Durkheim, 1897; Kesic, Thomas and Ogloff, 2012; Kingshott, 2009; Klinger, 2001).

2.2.4 The conflicting influence of time

In communicating with a person who has 'planned' SbC the use of time may only have a limited influence in moderating the risk of injury or death (Mohandie, Meloy and Collins, 2009). As the police response is a dynamic reaction, a 'planned' SbC reduces police time or ability to employ other strategic options which may avoid a fatal outcome (Kesic, Thomas and Ogloff, 2010, 2012; Mohandie, Meloy and Collins,

2009; Mohandie and Meloy, 2010; Parent and Verdun-Jones, 1998). Hutson *et al.* (1998) cite 37% of US SbC incidents (*n*=437) are concluded within five minutes, with other research suggesting that 70% of fatal police shootings happen within 30 minutes (Kesic, Thomas and Ogloff, 2012; Kingshott, 2009). Conversely, by using a 'low key' response through limiting police officer numbers or by providing the subject space, time and utilising effective communication, it may provide a more effective option (Kesic, Thomas and Ogloff, 2012; Klein, 2006; Parent and Verdun-Jones, 1998; Ruiz & Miller, 2004; Van Zandt, 1993). While the conclusion may be dependent on the duration of the event, the psychological effect of a violent scenario and either party being surprised increases the likelihood that officers will respond with lethal force (Best and Quigley, 2003; Fridell and Binder, 1992; Lord, 2000; Mohandie and Meloy, 2010; Parent and Verdun-Jones, 1998).

Suicidal thoughts or an abnormal fixation with death may add to circumstantial evidence of suicidal ideation. Where specific intent is uncertain, the influence of particular risk factors may lead to fatal interaction with police, where an individual's unintentional or hypothetical plan may be 'accidently' completed (Lord, 2012).

2.2.5 Suicidal risk factors

A person's individual 'genetic, biological, social, psychological, environmental and situational factors' (Pillay and Thomas, 2015, pp. 555) may influence the risk factors and their propensity towards suicide. The central characterised risk factors are extensive and may include; mental health, previous suicide attempt, gender, suicidal ideation, alcohol or drug misuse, domestic violence, capability and lethality of means, severe depression and any unexpected or stressful life events e.g. familial death, divorce or marital separation, dismissal from work, personal injury or illness (Azizi, 2010; Booth *et al*., 2010; Lord, 2012; Parent and Verdun-Jones, 1998; Pillay and Thomas, 2015). Defined as a 'Complex suicide', between 1 and 5% of subject's use more than two methods to achieve suicide, either concurrently or in succession (Azizi 2011; Pillay and Thomas 2015). The consumption of alcohol or drugs with hanging, asphyxiation or a firearm are examples of some of the most common reported methods in complex suicides (Pillay and Thomas 2015; Racette and Savageau, 2007; Toro and Pollak, 2009). Demographically there is a statistical variation which appears influenced by gender, methodology and risk factors, with a higher male to

female ratio of completed complex suicides (Pillay and Thomas, 2015). SbC may be considered within the typology as a complex suicide.

SbC research indicated 89% of subjects were male (*n*= 109) with a general age span between 15 to 80 years and a mean age of 31.8 years (Homant, Kennedy and Hupp, 2000). Comparable studies agreed and cited that 89-96% were male with a narrower age range of 18-54 years (Lankford, 2015a, 2015b; Lord, 2004; Pyers, 2001). Lord's (2012) comprehensive quantitative examination of US National Violent Death Reporting System (NVDRS) data (*n*=918), comprised of primary police reports and coroner narratives, giving a demographic analysis (Figure 2) which concurs with generalised suicide data and reports (Degue, Fowler and Calkins, 2016; Samaritans, 2016; World Health Organisation, 2016).

Characteristics	*n*	*%*
Gender		
Male	883	96.2
Female	35	3.8
Race		
White	531	57.8
African American	352	38.3
Other	35	3.8
Age		
Younger than 25	186	23.6
25 to 34	276	53.7
35 to 44	216	23.5
45 or older	209	22.8
Education		
Dropout	152	16.6
High school	156	17.0
College or trade	56	6.1
Marital status		
Single/widowed	498	54.2
Married/cohabitate	236	25.7
Divorced/separated	165	17.9

Figure 2. Demographics of sample (Source: Lord, 2012, p. 1639).

2.2.6 Risk factors influencing ideation

The breadth of commonly reported disorders or diagnosis within suicide samples is extensive; from personality disorders, schizophrenia, major depression to bipolar disorder and substance abuse disorders, with particular attention to behaviours that intensify suicidal ideation including aggression, impulsivity, hopelessness, depression and anxiety (Dewey *et al.*, 2013; Homant and Kennedy 2000; Kingshott, 2003; Parent and Verdun-Jones, 1998; Pillay and Thomas 2015). Although mental health and particularly depression appear to be a leading precursor to suicide; substance abuse, predominantly alcohol, is the second most contributory risk factor, with research arguing that over 50% of suicidal individuals were under the influence of alcohol (Ho *et al.*, 2007; Lord, 2004; Pyers, 2001).

The literature suggests mental illness is the foremost risk factor for suicidal ideation and outcome, with Homant and Kennedy (2000) finding that 22% (*n*=27) of SbC subjects had documented mental health issues (Azizi, 2010; Homant and Kennedy 2000; Kingshott, 2009; Pillay and Thomas, 2015). In isolation, this small sample size may affect the validity of this research conclusion; Pyers (2001) also cited 58% had some type of psychiatric record and another comparative study of SbC mass shooters (*n*=185) indicated 88.9% were 'suicidal or life indifferent' (Lankford, 2015a). Another US quantitative study agreed, classifying 25% of SbC subject's (*n*=275) were known by police or mental health services (Lindsay and Lester, 2004; Mohandie & Meloy, 2010; Ogloff *et al*., 2013; Pillay and Thomas, 2015). Significantly, US studies indicate that mentally ill individuals were 3.49 times more likely to be involved in a provoked police shooting, increasing to 9.97 in a siege incident (Mohandie and Meloy, 2010; Pillay and Thomas, 2015;).

Arguably, those who commit suicide face societal and systematic strains. It has been contentiously argued that SbC is 'not really a police problem' (Azizi, 2010, pp.192) but the obligation of public health services to engage that individual in an early intervention strategy. Although, hypothetically this may be accurate, the purpose of the police has always been more than just dealing with crime (Bittner, 1970; Wolff, 2005). Additionally, at the point of suicidal realisation where a vulnerable individual's capability or threat is significant, the utilisation of the public police is 'in the interests

of community welfare and existence' (Lentz and Chaires, 2007, p.69) appears to be an ethically legitimate use.

Lord's (2012) SbC study identified correlations between suicidal intent, risk factors and other interchangeable suicide related variables. Figure 3 (Lord, 2012, p.1641) reveals the comparative quantitative analysis between individual characteristics and unconnected variables through the degree of intent. This study integrates and validates former SbC studies (Hutson *et al*., 1998; Lord and Sloop, 2010; McKenzie, 2006; Mohandie, Meloy and Collins, 2009); quantifying significant connections between SbC intent and behavioral influences including substance addiction, domestic violence, previous suicide attempts, mental health crisis or a refusal to surrender (Booth *et al*., 2010; Drylie, 2006; Homant and Kennedy, 2000; Hutson *et al*., 1998; Lord, 1998, 2000; Mohandie, Meloy and Collins, 2009; Miller, 2007, 2015; Parent and Verdun-Jones, 1998; Wilson *et al.*, 1998;).

Although a specific agreed definition for SbC does not exist, Lord (2012) theorises the probability of an SbC event in a quantifiable measurement, by using the scale of intent against specific demographic and/or risk factors. For example, a subject's refusal to surrender when combined with a risk factor such as mental health crisis, substance abuse or an ongoing domestic incident, indicates a diminished intent to commit SbC; however, when combined with an earlier suicide attempt may intensify their SbC ideation (Booth *et al*., 2010; Lord, 2012;). Whilst early research solely focused on the police tactical deployments, inadequate demographic information was collated about the subject or their perceived intent. Despite insufficient clarity, consensus or a definition, researchers have started to determine quantifiable findings by studying the specific contextual components of SbC events. Current research now hypothesises the likelihood of SbC through comparative analysis of an individual's specific traits, risk factors and intent against previous case studies.

The next section will explore how understanding decision making processes and analysis may assist the police to implement collaborative strategies thereby minimising risk to the public, police and subject; thus preventing deaths and diverting those vulnerable people towards a healthcare pathways.

Characteristics	No Intent		Behavior Intent Only		Behavior and Verbal Intent		Behavior and Planned Intent		Behavior, Verbal, and Planned Intent	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
Gender										
Male	606	68.6	188	21.3	53	6.0	5	0.6	31	3.5
Female	19	54.3	9	25.7	5	14.3	0	0.0	2	5.7
Race***										
White	308	58.0	140	26.4	50	9.4	5	0.9	28	5.38
Non-White	317	81.9	57	14.7	8	2.1	0	0.0	5	1.3
Age***										
Younger than 18	29	93.5	1	3.2	0	0.0	0	0.0	1	3.2
18 to 24	140	75.3	29	15.6	7	3.8	0	0.0	10	5.4
25 to 34	205	74.3	50	18.1	15	5.4	1	0.4	5	1.8
35 to 44	128	59.3	56	25.9	21	9.7	2	0.9	9	4.2
45 or older	123	58.9	61	29.2	15	7.2	2	1.0	8	3.8
Education										
Dropout	109	71.7	32	21.1	6	3.9	1	0.7	4	2.6
High school and above	136	64.2	45	21.2	20	9.4	1	0.5	10	4.7
Marital status*										
Never married or not married now	478	70.1	131	19.2	43	6.3	5	0.7	25	3.7
Married/widowed	147	62.3	66	28.0	15	6.4	0	0.0	8	3.4
Prior suicide attempts***										
No	614	74.5	173	21.0	24	2.0	4	0.5	9	1.1
Yes	11	11.7	24	25.5	34	36.2	1	1.1	24	25.5
Crime in progress***										
No	279	58.0	131	27.2	41	8.5	4	0.8	26	5.4
Yes	346	79.2	66	15.1	17	3.9	1	0.2	7	1.6
Domestic dispute in progress***										
No	559	74.7	119	15.9	39	5.2	5	0.7	26	3.5
Yes	66	38.8	78	45.9	19	11.2	0	0.0	7	4.1
Mental illness or addiction***										
None known	566	72.5	151	19.3	39	5.0	4	0.5	21	2.7
Known	59	43.1	46	33.6	19	13.9	1	0.7	12	8.8
Acute crisis***										
No	564	75.5	127	17.0	32	4.3	5	0.7	19	2.5
Yes	61	35.7	70	40.9	26	15.2	0	0.0	14	8.2
Drug use during incident										
No known use	451	70.2	136	21.2	35	5.5	4	0.6	16	2.5
Known use	156	63.4	55	22.4	20	8.1	1	0.4	14	5.7
Criminal history***										
No	321	59.3	152	28.1	33	6.1	5	0.9	30	5.5
Yes	304	80.6	45	11.9	25	6.6	0	0.0	3	0.8
Surrenders***										
No	435	62.1	177	25.2	55	7.8	4	0.6	30	4.3
Yes	190	87.6	20	9.2	3	1.4	1	0.5	3	1.4

*$p < .05$. ***$p < .001$.

Figure 3. Comparison of Personal Characteristics and Independent Variables Across the Degree of Intent (Source: Lord, 2012, p.1641).

2.3 Factors which affect police response

This section contrasts and reflects upon the reality of operational policing against the two preceding sections of this thesis, critically examining the research. Firstly, by examining the UK policing model, it aims to understand influences that shape any response and compare these against the E&W policing paradigm. Developing an understanding of the police decision making process within critical incidents, this thesis examined how heuristics, perception and bias may influence the use of lethal force. The 'hidden' nature of an individual aspiring to realise their SbC ideation with lethal capability, creates an operational dilemma for police to pragmatically restrain their own use of lethal force. Finally, this section identifies collaborative pro-active methods that could be developed to de-escalate and minimise the use of potentially lethal force.

2.3.1 The British policing framework and paradox

In E&W, the development of a consent based unarmed policing model for the benefit of an unarmed population has changed little since 1829. However, in response to the 1987 Hungerford massacre, the UK Government instigated legislative measures to restrict public access to firearms and created a full-time armed police capability to protect the public (Mawby, 1999; Squires and Kennison, 2010). In E&W, armed officers act in response to support unarmed colleagues, which appears to support why police discharged firearms in just 0.024% of all deployments (*N*=44,800) (Best and Quigley, 2003; Mawby, 1999; Metropolitan Police Authority, 2003; Squires and Kennison, 2010). This lack of protection creates an important paradox, as police officers have to adapt and employ different techniques to deal with a theoretically dangerous subject (Knutsson and Strype, 2003). Similarly, a comparative analysis between routinely armed Swedish police and their Norwegian equivalents, who required permission before withdrawing weapons, identified a five-fold increase in Swedish police firearms discharges (Knutsson and Strype, 2003).

The police have always provided an important social function as 'quasi-social workers', but now frequently act as first responders to more persons in mental health crisis than ever before (Clifford, 2010; Cummins and Edmondson, 2016; De Tribolet-Hardy *et al.,* 2014; Lamb, Weinberger and Decuir, 2002; Short *et al*., 2014; Wollf,

2005). SbC has the taxonomy of a 'wicked' problem e.g. the critical nature of the event, a person in crisis with hidden vulnerabilities at the point of suicidal realisation, requiring decisive police action to save life, within a minimal timeframe for decision-making or implementation (Grint, 2005; Rittell and Webber, 1973).

2.3.2 The British policing 'restraint paradigm'

The assumption in E&W is that each person has an absolute right to life is set within Article 2 Human Rights Act 1998. Described as the 'restraint paradigm' (Squires and Kennison, 2010, p1) the use of minimal force, within the law and against a citizen, sustains the legitimacy of the police to serve the public. The context and facts of any police shooting in E&W are scrutinized by an independent investigative body[6], with recommendations made to remedy 'mistakes' in training, tactics, command or police weaponry (Best and Quigley, 2003; Squires and Kennison, 2010).

Mental illness is a significant risk factor, with US studies indicating those in crisis are twelve times more likely than the general population to be fatally shot (Ogloff *et al*., 2013). Contrary to the E&W context, countries that have routinely armed police provide an immediate and accessible capability for an individual to realise their suicidal ideation (Ogloff *et al*., 2012; Parent and Verdun-Jones, 1998; VanZandt, 1993). Between 1999 and 2001, the UK police deployed firearms on 44,800 and in that period reported 20 discharges and 11 fatalities (Metropolitan Police Authority, 2003). A key review (Metropolitan Police Authority, 2003) cited 48 recommendations to improve the tactics, training and management practices, with two crucial themes that increased the probability a shooting; a subject's vulnerability and the unsuitable use of 'standardised' tactics to resolve the incident speedily. Best and Quigley (2003) quantitative study analysed UK police shootings, using a binary assessment criterion to generate an 'individual vulnerability score' to quantify the individual, context-based or policing risk. However, the classification to score or calculate the subject's vulnerability was not disclosed.

Debatably, the existence of risk factors intensifies the likelihood of confrontation; by applying a 'vulnerability score' (Best and Quigley, 2003) and a presumption of the

[6] Formerly Police Complaints Authority (PCA), then Independent Police Complaints Commission (IPCC) and now the Independent Office for Police Conduct (IOPC).

subject's rationality it could influence the likelihood of a fatal outcome. Educating officers to recognise primary indicators may reduce the need for lethal force and if practicable within the situational context, to restrain this use of force or utilise alternative tactics (Azizi, 2010; Best and Quigley, 2003; Dewey *et al.,* 2013; Metropolitan Police Authority, 2003). Seeking a rapid resolution by the use of tactics or force may compound the probability of 'mistakes' occurring or a weapon being discharged by police (Best and Quigley, 2003; Best, Quigley and Bailey, 2004).

At the point of contact, a subject's vulnerability may be concealed by their exaggerated behavioural factors, therefore increasing the risk and complexity of the incident. Arguably, the 'learning by mistakes' method employed by the IOPC reflects a deficiency of SbC evidence-based studies, placing responders, with a limited range of tactical options, in an almost untenable position (Best and Quigley, 2003; Best, Quigley and Bailey, 2004; Metropolitan Police Authority, 2003; Squires and Kennison, 2010). To enhance knowledge of the fundamental risks and develop greater understanding of the context when police may fire, requires an empirical examination to understand how police use force upon those suffering with mental illness (Best and Quigley, 2003; Best, Quigley and Bailey, 2004; Kesic, Thomas and Ogloff, 2010, 2012; Klinger, 2001).

2.3.3 Cognitive decision-making

For many reasons within the specific context of any critical incident, the information may be unclear and overly complex to fully unravel in time-pressured circumstances (Alison *et al*., 2007; Flin and Arbuthnot, 2002). Effective decision making within these conditions is vital to enable and facilitate an efficient response, placing a considerable cognitive burden upon the decision makers in constantly changing situations. Alison *et al*. (2007) examined the decision-making process, separating it into three stages: 'situation assessment'; 'plan formulation'; and 'plan execution'. Therefore, a responding officer is reliant on their skill and knowledge to quickly evaluate a scenario and instigate an appropriate tactical response to mitigate any threat (Alison *et al*., 2007; Hastie, 2001; Klein, Calderwood and MacGregor 1989; Yates, Venott and Patalano 2003).

Heuristics are ‘mental shortcuts’ or strategies that are a type of decision-making process which, utilises a simple ‘rule of thumb’ to cognitively resolve complex scenarios within an unpredictable environment (Mousavi & Gigerenzer, 2014, p.1672). These ‘fast and frugal’ heuristics, permit rapidly accurate decisions to be made in uncertain circumstances, with minimal information or cognitive effort; and which can be as effective as those decisions made using an intentionally deliberate process (Gigerenzer, Todd and ABC Research Group, 1999; Gladwell, 2007; Mousavi and Gigerenzer, 2014). Also characterised as intuition, unconscious heuristics are where an individual may not be able to rationalise the ‘automatic’ reason for selecting an option (Gladwell, 2007).

The intuitive process is quickly adapted to the prevailing circumstances with little conscious effort and is initiated through rapid identification of an incident through visual or other indicators (Bryant *et al*., 2017; Gladwell, 2007). ‘Expert practitioners’ who have gained knowledge through heuristics and experience use this intuitive approach. Where a decision maker is more proficient in the role, there is a likelihood they will be ‘recognition primed’ or through intensity of training ‘conditioned’ to make a quicker response (Burrows, 2007; Klein, Calderwood and MacGregor 1989). This enables them to intuitively react quicker and initiate a reaction; or where they are sufficiently expert to bypass the normal linear approach and make accurate ‘leaps’ in the decision making process (Alison *et al*., 2007; Jenkins *et al*., 2010). It is argued that actual experts ‘ […] know when they don’t know. However, non-experts (whether or not they think they are) certainly do not know when they don’t’ (Kahneman and Klein, 2009, p.524). It is the nature of this subjective confidence in intuitive decision making which challenges its own hypothesis (Kahneman and Klein, 2009).

Termed ‘adaptive expertise’, it allows decision makers (in this case firearms officers) to ‘cognitively and behaviorally adapt to unpredicted and dynamic events’ (Boulton, 2016, p292); recognising when and why particular options were or were not applicable and intuitively identifying when tactics should be modified (Boulton, 2016; Wiltshire *et al*., 2014). It could be safety critical to a firearms officer that any judgment, assessment or a correct ‘shoot or no-shoot’ tactical option is selected within an instant of time; with an adverse effect giving the officer negligible time to calculate a subject’s intent (Burrows, 2007). It appears through regular exposure to training and live operational deployments that firearms officers can respond to these

environmental cues, increasing their intuitive and cognitive decision-making ability (Boulton, 2016; Burrows, 2007).

Similarly, Lipshitz and Ben-Shaul (1997) contrast how 'experiential difference' may affect performance between the expert and novice; where 'novices will deliberate about which option to select while experts will deliberate about what is going on in the situation' (Lipshitz and Ben-Shaul, 1997, p.160). The analytical, rational and conscious decision-making approach is time-consuming, following a prescribed linear route without deviation. 'Following the rules' is often utilised in the early stages in a new role, as this is considered to be a safer preference by novices until knowledge is acquired (Bryant *et al*., 2017). This knowledge can then assigned to memory for use in complex environments, offering a range of rapidly available strategies characterised as 'cognitive niche' (Mousavi and Gigerenzer, 2014). Through the use of any repetitive learning activity, it may assist decision makers to enhance both intuitive and analytic methods to process information (Alison *et al*., 2007; Allen, 2011). Dependent upon the task, decision makers may have the ability to switch between an unconscious or intuitive decision making process, to a thoughtful and analytic approach (Kahneman and Frederick, 2002).

2.3.4 Decision Making - Barriers and Biases

By evading, disregarding an option or failing to commit to a decision through 'decision inertia', this inactivity may stall or halt any decision-making process due to uncertainty and the subsequent doubt created (Alison and Crego, 2012; Alison *et al*., 2007; Lipshitz and Strauss, 1997; Power and Alison, 2014). Lipshitz and Strauss (1997) theorise three strategies to manage uncertainty; by 'reducing' or eliminating it altogether through collecting sufficient information before making any decision; 'acknowledging' and selecting an option which evades risk; or lastly 'suppressing' and rejecting any adverse information. However, despite collation of additional information the decision quality may not be enhanced due to the ambiguity of environmental factors (Fredrickson and Mitchell, 1984; Kahneman and Klein, 2009). Stress or other emotional factors may further influence decision making; with positive emotions increasing creativity in problem solving and information assimilation (Alison and Crego, 2012; Mellers, Schwartz and Cooke, 1998). In contrast, negative emotions can result in the quicker use of information, increasing the accuracy of any

resulting decision (Estrada, Isen and Young, 1994).

Although stress may weaken cognitive performance or narrow the field of concentration, this is particularly significant in critical incident decision making, which also necessitates the organisation of concurrent and complex tasks (Fiedler,1988, cited in Mellers, Schwartz and Cooke, 1998; Kahneman, 1973; Pashler and Johnston,1998). Any heuristic evaluation process may disregard significant or relevant information and result in flawed decisions (Kahneman and Tversky, 1973). Where errors in heuristic decision-making occur, this may also be attributable to a number of wide-ranging individual cognitive biases (Brighton and Gigerenzer, 2012; Bryant *et al*., 2017; Hodgkinson and Maule, 2002). A bias may deviate any decision-making process from a more scientific normative, predictive or logical approach (Bryant *et al*., 2017; Vroom and Jago, 1974). For example, incorrectly assessing a situation by excluding or not considering all of the relevant data (base rate fallacy); or by being inclined to pursue, infer or place emphasis on specific information to corroborate a preconception (confirmation bias) (Kahneman and Klein, 2009).

2.3.5 The dichotomy of restraining instinctive reaction

The challenge facing officers reacting to a spontaneous and rapidly developing situation is undeniably testing; to evaluate the risk an individual may present, with limited information relating to their vulnerabilities or influencing behavioural factors (Brown *et al.,* 2004; Mohandie and Meloy, 2010; Pillay and Thomas 2015; Silverman, 2006). Although identification of behavioural risk factors may be valuable, an officer's individual bias may negatively affect the assessment of the true level of threat presented (Best and Quigley, 2003). Where unconscious bias towards the mentally ill may exist in the general population; within the police service a contributable factor may be the influencing effect of an officer's previous operational or training experiences (Parent and Verdun-Jones, 1998 Pescosolido *et al*., 1999; Socall and Holtgraves, 1992).

There appears a theoretical link between the officers' assessment of an individual's vulnerability, the situational context and likelihood of police shooting; as, without exhibiting any significant behavioural characteristics, an officer was more likely to shoot if the person posed a threat to life. Conversely, if the person was identified to

be vulnerable e.g. through mental health or substance misuse, studies indicated police restrained the use of force for extended periods before discharging their weapons (Best and Quigley, 2003; Ho *et al.*, 2007).

Where officers face violence or believe a particular situation to be dangerous, MacDonald *et al.* (2001) argue that 'Danger perception theory' increases the probability that officers will use lethal force in incidents. Additionally, the likelihood of police firing a weapon is probably increased by the subjective bias of that person, situational or environmental aspects, the community or policing context (Alpert, 1989; Garner *et al*., 1996; Miller, 2015). The ability to analyse the 'deadly mix' (Pinizzotto *et al.*, 2012) hypothesis is still perplexing scholars e.g. the dynamic interaction between the police and the individual, and to also quantify the 'perceived' versus 'actual' danger of the encounter at the time of suicidal completion (Homant, Kennedy and Hupp, 2000).

2.3.6 Perception and quantifying 'dangerousness'

US studies indicate that between 10% and 38% of police are injured whilst employing physical control techniques upon a subject and *any* use of force increases the likelihood of injury to responding officers (Alpert, 2015; Alpert *et al*., 2011; Johnson, 2011; Lord, 2014). However, another US quantitative study (*n*=6131) reported there was no apparent rise in injuries to either police or mentally ill suspects when physical forced was used (Morabito and Socia, 2015). Conversely, suspects perceived to be mentally ill resisted in 74% (*n*=4536) of incidents and if the individual was intoxicated, through alcohol or drugs, it significantly increased the probability of injury to all parties (Alpert, 2015; Best, Quigley and Bailey, 2004; Engel, 2015; Mulvey and White, 2013; Metropolitan Police Authority, 2003; Morabito and Socia, 2015; Rekrut-Lapa & Lapa, 2014; Schulenburg, 2016; Watson, Corrigan and Ottati, 2004; Watson & Fulambarker, 2012).

Homant, Kennedy and Hupp (2000) post-incident quantitative study rated 'actual' danger, classifying fatal incidents to unarmed persons who implied they were in possession of a firearm. As 'actual' danger can be quantifiably measured, learning can be achieved by reproducing these situations in future training. Yet, 'perceived' danger has a legally significant meaning and is challenging to measure; where

officers may use their own personal perception as a potential justification for any proportionate use of lethal force (Homant, Kennedy and Hupp, 2000).

Watson, Corrigan and Ottati (2004) qualitative study theorised how an officer's subjective view of a mentally ill individual influenced the outcome of a scenario. Officers (*n*=382) were observed in training initially sympathising with the individual's mental health condition and believing them to be irresponsible for their actions, treated them compassionately (Alpert, 2015; Engel, 2015; Morabito and Socia, 2015; Watson, Corrigan and Ottati, 2004). However, the officers still perceived this mentally ill subject as dangerous; which impacted upon their inclination to utilise less coercive methods to resolve the incident, instead escalating or increasing the degree of force used (Johnson, 2011; Ruiz and Miller, 2004; Short *et al*., 2014; Watson, Corrigan and Ottati, 2004; Wood, Watson and Fulambarker, 2016). Suicidal risk factors have a resultant influence on behaviour or logical reasoning, requiring responding officers to flexibly utilise tactics, specifically applying them to the circumstances to nullify the threat (Best and Quigley, 2003; Lord, 2012; Parent and Verdun-Jones, 1998).

2.3.7 Influencing a tactical use of 'restraint'

The subject's actions stimulate a police response, where following a sequence of events, an escalation may occur and lethal force may be used to mitigate a potential threat to life. To sustain public protection and minimise risk to both officers and the subject, the competence of police to strategically use tactics is essential. Yet, to reduce the probability of a vulnerable person being shot requires a capacity to determine or predict the influence that particular SbC risk factors have upon that individual (Best and Quigley, 2003; Parent and Verdun-Jones, 1998).

Fridell and Binder (1992) deliberated how the initial interaction point, communication and the series of events thereafter may all be influential to the probability of lethal force being used. By educating officers to recognise suicidal risk factors, it may influence or restrain the need for the use of lethal force. This may also facilitate a period of time where other strategic or tactical opportunities could be employed (Azizi, 2010; Best and Quigley, 2003; Mohandie and Meloy, 2010; Pinizzotto *et al.,* 2012). US quantitative research compared SbC to non-SbC fatal shootings which occurred during intervention techniques (*n*=508) (Lord, 2014). Whilst previous

research suggested individual behavioural indicators were predictors to police use of force; there appears a convincing argument to create a 'time interval' to de-escalate any confrontation and achieve the subject's compliance via communication or alternative tactical methods (Garner *et al*., 1996; Johnson, 2011; Lord, 2014; McKenzie, 2006; Pinizzotto, Davis and Miller, 2005).

Developed as 'Interactional theory' (Parent and Verdun-Jones, 1998, p.433) it argued by using a less hostile response it may de-escalate the incident and subsequently counteract a vulnerable person's behaviour. Similarly, by strategically withdrawing it may reduce any impulsive response, giving each of the participants sufficient time or distance (Azizi, 2010; Ho *et al*., 2007; Kesic, Thomas and Ogloff, 2012; Miller, 2015; Mohandie and Meloy, 2010; Parent and Verdun-Jones, 1998). US research reported the safe resolution of between 50% (*n*=1111) and 93% (*n*=1012) of incidents involving mentally ill persons; where lethal force could have been legally utilised, officers 'tactically restrained' themselves from firing a weapon (Ho *et al.,* 2007; Pinizzotto *et al.,* 2012). However, despite the use of time or other tactics, if a person's ideation is not being fulfilled, they may escalate incident to accomplish their aspiration (Mohandie and Meloy, 2010; Parent and Verdun-Jones, 1998).

The literature reveals a high proportion of shootings during spontaneous police deployments happen when the information or circumstances are imprecise or the individual did not follow police instructions (Azizi, 2010; Best and Quigley, 2003; Fridell and Binder, 1992; Kesic, Thomas and Ogloff, 2012; Mohandie and Meloy, 2010; Pinizzotto *et al*., 2012; Miller, 2015). However, by planning a deployment and utilising an effective command structure, it minimises the risk of police firing shots and increases the probability of neutralising any potential threat safely (Best and Quigley, 2003; Fridell and Binder, 1992; Metropolitan Police Authority, 2003). Yet, there is a narrow range of tactical options for police to effectively intervene and save the life of any suicidal individual. An intervention may not be a safe or achievable option; especially without representing a considerable risk to officers, particularly where this is unlikely to prevent the intended death or the individual is only threatening their own life (Ho *et al*., 2007; Kesic, Thomas and Ogloff, 2012; Lord, 2014).

The ‘method’ of policing a person in mental health crisis may influence the outcome; as the mere presence of armed police may create the means for the subject to accomplish their SbC ideation (Dewey *et al*., 2013; Mohandie and Meloy, 2010; Ogloff *et al.,* 2013). Where police are first responders and encounter a mentally ill suicidal person, who is vulnerable and supervised in the community, it represents a possibility of inadvertently increasing the lethality of the event or maintaining public protection (Dewey *et al*., 2013; Mohandie and Meloy, 2010; Ogloff *et al*., 2013; Wood, Watson and Fulambarker, 2016).

2.4 Summary

The hidden characteristics of suicide are explored to understand the resultant impact of suicide risk factors and how demographic inequalities may influence ideation. Durkheim's (1897) influential study hypothesised suicide, classified a comprehensive motivational typology and by exploring Wolfgang's (1957) formative "Victim Precipitated Homicide' hypothesis this chapter examined the challenges within SbC extant research. This thesis recognises the effect of validated suicide statistics has upon future public health strategy. Irregularities created within incident records and Coroner's judgments complicate an already challenging environment, further complicated by the variety of multi-discipline suicide classifications. The deficiency of post-incident data from realised or de-escalated SbC incidents presents research opportunities to enhance the use of force paradigm and explore where 'restraining' the use of lethal force may be appropriate.

Where lethal force is used reactively, post-incident interpretations of the complex factors influencing risk, situational or behavioural factors are necessary to identify 'hidden' suicidal intent. Comparing the use of complex approaches in carrying out SbC and the behavioural chain may assist in establishing intent at the time of death. Mental illness a considerable risk feature in both SbC ideation and completed suicides

The function of the police is not exclusively directed towards crime, but to safeguard those vulnerable within society. Examining the E&W 'unarmed paradox' this section considered how police legitimacy might be maintained within the 'restraint paradigm'. Further studies are required to influence policy, training and operational response, and this thesis questions the legitimacy of the current 'learning by mistakes' approach. Trying to mitigate the risk or threat posed by a vulnerable individual at the time of suicidal ideation places responding officers in a challenging position. A vulnerable individual's ideation may be significantly advanced, negating reactive tactics, options or police capability employed to change or avert that person's suicidal intention.

This thesis compares extant literature, arguing that ‘adaptive expertise’ may permit firearms officers to react quicker in a more ‘recognition primed’ and intuitive response. By recognising environmental cues earlier, an officer’s cognitive ability may be enhanced, reducing the decision-making process and offering a tactical advantage. By examining how training, ‘dangerousness’ perception, bias and experience affect the use of lethal force, this thesis discusses the implications of the strategic use of restraint, the conflict of limiting such an instinctive reaction and de-escalation techniques to minimise the use of lethal force. Significant knowledge gaps are identified, necessitating further co-operative research to increase understanding and improve the multi-agency response.

The next chapter will justify and explore the methodological approach used to answer the research question.

3. Methodology

The purpose of this section is to discuss the chosen research methodology in relation to other established approaches. Justifying the research strategy used in this thesis and the methodology applied, this section will introduce the systems that were used or applied in pursuit of the core research question (RQ1). The technique employed must not only be driven by the research question, but also by the suitability of a particular philosophy to achieve the aims and objectives of the research.

3.1 Problem Statement

'Suicide by Cop' (SbC) is an occurrence where a vulnerable individual with 'lethality of means' commences self-destructive potentially violent behaviour. An individual's conduct may be used to induce police to use lethal force through a purposeful intentional process or with indifference to any subsequent consequences. What may be described as 'High impact low probability' type of event can be challenging to research or measure. The limited and historic nature of the extant research within England and Wales (E&W) necessitates a 'mixed methods' approach, using both quantitative and qualitative methods to study and develop an understanding of the same research topic.

3.1.1 Purpose of the study

The purpose of this research is to develop a clearer understanding of how police officers in E&W attempt to resolve the interaction with a high-risk person including those who may be in mental health crisis.

3.2 Research Questions

Within the E&W policing context, this thesis seeks to understand the main research question:

RQ1: 'How does an Authorised Firearms Officer (AFO) compared with unarmed Specially Trained TASER Officer (STTO) policing affect decision making?'.

Developing and assisting to answer the main research question, this study will also consider the following sub-questions:

RQ1a: Do routinely unarmed (STTO) officers respond differently to their routinely armed counterparts during (conflict?) interactions with the public?

RQ1b: Is there any difference in decision making or the subsequent application of force between an AFO and unarmed officer to resolve an incident with a PMI?

RQ1c: Do 'high risk' groups mean officers are more likely to use certain strategies?

RQ1d: How does the AFO response to those they perceive are intent on self-harm differ to unarmed officers?

The majority of police officers in the 43 E&W forces are routinely unarmed, with each force having access to a number of permanently armed officers. An AFO may be defined as an 'officer who has been selected, trained, accredited and authorised by their chief officer to carry a firearm operationally' (College of Policing, 2019). The focus of this research was London based, using Metropolitan Police Service (MPS) officers and data. With the largest population (8.9m) London accounts for approximately 16% of recorded crime and over a third of all firearms incidents in E&W. Compared to other E&W forces; the MPS also has the biggest workforce (*n*=31,028), with the largest number of AFOs (circa 2500) and TASER[7] trained officers (*n*=4889) for any police area (Home Office, 2018a; ONS, 2018). As a serving police officer and AFO an additional reason for using the MPS is the ability to gain access to perform this study.

[7] A registered brand name, TASER is an abbreviation for Thomas A. Swift Electronic Rifle.

The null hypothesis is, there is no initial difference between ‘unarmed’ specially trained TASER officers (STTO) or Authorised Firearms Officers in response to a person with mental illness. However, where the threat or risk posed by the subject exceeds the operational capability of the STTO, the alternative hypothesis suggests there is a difference and hence AFO specialist tactics, training or equipment may be required.

A mixed methods strategy was developed to assist in understanding the use of force paradigm in E&W and to analyse the core research question.

3.3 Conceptual framework

The methodological approach adopted for this research may be defined within philosophy, where concepts relating to a phenomenon are collated, examined and utilised. Whilst not mutually exclusive, certain philosophies can be subdivided within a range of disciplines; within policing the philosophies may be considered as positivism, interpretivism, pragmatism and realism. The research design and approach in this thesis will draw from the pragmatist philosophy. Generally, this philosophy develops from acts, circumstances or outcomes. It underpins a mixed methods research design within social sciences; initially concentrating upon the problem, by applying a diverse and concentrates on a 'what works' approach to establish knowledge or comprehend a problem (Creswell, 2009; Morgan, 2007; Patton, 2002; Rossman and Wilson, 1985). A mixed method is not dedicated to any one technique, but 'enquirers draw liberally from both quantitative and qualitative assumptions when they engage in their research' (Creswell, 2009, p.10).

Consideration was given to adopting other methodological approaches for this research thesis; including Grounded Theory Method (GTM), a Randomised Control Trial (RCT) and a qualitative or quantitative only study.

Described as 'theoretical sensitivity', a fundamental feature of GTM is the researcher must set aside preconceived theoretical ideas to allow a central theory emerge from the data (Glaser, 1978). Theoretical components are established and relationships or connections between constructs further developed (Gregor, 2006; Urquhart, 2012). The collation of police Use of Force (UoF) data within E&W has only recently commenced and subsequently been published. Whilst the GTM approach may be suitable for examining the overall UoF, it was unlikely to achieve the research aims within the timescale or enhance understanding of UoF against a high-risk person in mental crisis.

The RCT is epitomised as a 'gold standard' research method and compares a section of the population who receive a specific type or range of intervention, against a control group who does not. In medicine whilst advocating this approach, ethics committees have been unwilling to support RCTs which deprive a potentially useful treatment, are unfeasible due to 'difficulties with randomisation or recruitment' (Sibbald and Roland, 1998, p.201) or due to the time and cost implications. Although

the police service seeks to create an evidence base to validate or justify its actions and responses; the 'high impact-low probability' nature of SbC incidents, where the state may potentially resort to utilising lethal force, is of such a moral, legal and ethical significance it would make this study unsuitable for a RCT (Sibbald and Roland, 1998).

Consideration was given to using a singular qualitative or quantitative approach only. Whilst each may offer a focussed insight, this type of approach has been used within previous post-incident SbC studies. The aim of this research is to understand the use of force paradigm on a high-risk person within the E&W policing context. This requires analysis of use of force data and understanding the sample's reaction to certain scenarios involving threat, risk or vulnerable subjects. Whilst a singular approach would offer some contribution, it was discounted as this would not fully achieve the aims of this thesis.

Therefore, the method adopted within this research consists of a survey questionnaire, utilised primarily as a data collection tool to quantitatively analyse responses and draw conclusions from them. This is a mixed methods approach, providing 'methodological triangulation', with both quantitative and qualitative approaches to concentrate on the same research topic. Qualitative and quantitative approaches to research should not be considered at extreme ends of a scale, or in contrast to each other, but as 'different ends of a continuum' (Cresswell, 2009, p.3); with the mixed methods approach in the centre of this range combining fundamental components from both methodologies. This enhances the benefits each qualitative or quantitative method offers, balancing the innate weaknesses within particular approaches against the strength of another. This triangulation approach also minimises researcher bias, increasing its validity and reliability (Creswell, 2009, p. 202). Each of the methods necessitate the inclusion of philosophical assumptions and definite methods or processes.

This approach utilises a literature review to understand the issue, discuss existing theories, methodological approaches and examine gaps in knowledge. Quantitative analysis of use of force data will be used to develop understanding of frequencies, correlations and reliability. Quantitative analysis of the scenario-based survey questionnaire was utilised to offer a qualitative understanding of both the MPSUoF data and the research question.

3.4 Approach

This section will discuss the design and rationale for the use of a mixed methods approach. As previously indicated, SbC may be termed as 'high impact low probability' type of incident, creating challenges to measure or research this phenomenon. SbC research is exceptionally limited and a variety of approaches have been employed to understand the phenomenon, each within differing social or policing models. This thesis uses a literature review to frame understanding, examine current theory, research approaches and discuss knowledge gaps. Using Creswell's (2009) framework, the purpose or study aim is used to specifically classify the intent, design, data collection and detail the rationale for using a particular research approach. This research design adapts Creswell (2009) explanatory sequential strategy as shown in Fig. 4.

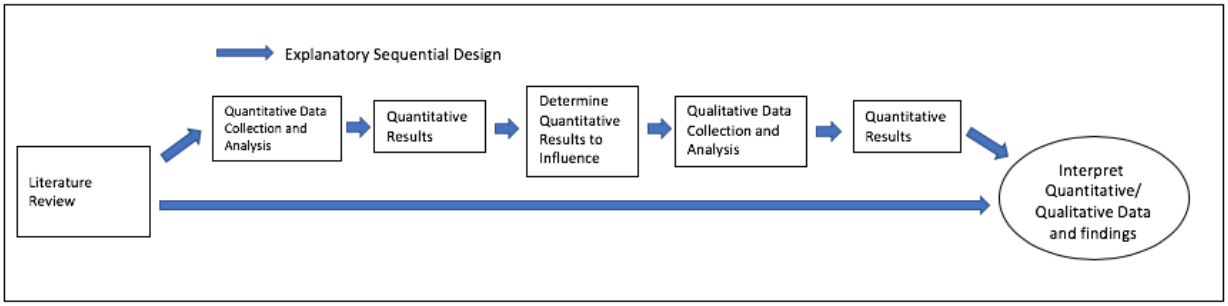


Figure 4. Explanatory Mixed Methods Sequential design (adapted from Creswell, 2009 p. 211)

Therefore, the purpose of this research is:

Intent – The aim is to understand if there is a difference in 'conflict' decision-making between a STTO and an AFO.

Design- An explanatory sequential mixed methods design was used, where quantitative and qualitative data were collected in sequence.

In comparison to other designs e.g. parallel or embedded models and convergent designs, this sequentially phased approach requires equal time to collate and process any data within each phase, increasing the overall length of time to accomplish the task (Creswell, 2009; Morse, 1991). However, this may not always be the case, as a beneficial design

characteristic is using quantitative methods to simplify the approach and statistically analyse qualitative data to measure a phenomenon (Hendy, 2019; Maruna, 2010).

Data collection- A literature review was employed as a framework to understand existing theories, identify gaps in extant research and other research strategies. MPSUoF quantitative data was initially examined to inform the construction of a scenario-based survey questionnaire, which was used to explore an officer's assessment of scenarios within their role specific functions. By comparing MPSUoF quantitative data in contrast with the survey questionnaire sample, statistical analysis was used to establish differences between the sample sub-groups in decision-making or use of force used on a PMI.

Rationale - A singular research approach alone is insufficient to understand the phenomenon. The quantitative element contains a vast amount of MPS UoF data from interactions, but does not give context or expand upon an officer's rationale. However, it does provide a reasonably objective overview of the association between the variables involved.

By examining historical use of force data and using this to validate the survey questionnaire, this research aims to enhance understanding of the police response and UoF paradigm within in the E&W context. Therefore, this design approach gives an opportunity to present supplementary evidence; to articulate or refute associations between variables, interpret behaviours or significance within specific contexts and to develop understanding of any potential interconnections within the phenomenon.

The following sequential phases were utilised: -

- Literature review - a 'non-committal literature review' (Urquhart, 2013) was conducted to develop a qualitative framework; to understand existing theories and outline research methodologies which may be further developed within the E&W context. This identified knowledge gaps within existing research for consideration and development within subsequent phases.

- Data collection and analysis - The primary source of information is a published statistical database detailing MPS UoF interactions and utilising statistical data analysis this informed future research phases.
- Collation and examination of data- giving equal emphasis to quantitative and qualitative data informs and gives focus to the compilation of the research survey questionnaire.
- Interpretation of findings - this strategy is informative, where quantitative methods are interpreted and the results qualitatively analysed against the literature. The relevance of the literature review will be determined and if needed re-evaluated during this phase for application to the findings.

With only four main phases the simplicity of this approach, with the ability to describe and report it present fundamental advantages. Utilising a mixed methods design permitted the comprehensive collation and examination of data, enabling a measurable narrative of UoF encounters to be produced whilst concurrently exploring theoretical concepts (Hendy, 2019). A balanced approach 'increase[s] the interpretability, meaningfulness, and validity of constructs and inquiry results by both capitalizing on inherent method strengths and counteracting inherent bias in methods and other sources' (Greene *et al*., 1989, p.259).

As explained earlier, this research utilises an amalgamation of methods to study the hypothetical base for tactical decision-making. The next section will discuss the quantitative phase.

3.5 Data

Previous UoF and SbC related studies have used a variety of approaches to empirically study police interactions. Due to the dearth of research, the majority of studies are not contemporary and relate to international studies including; Best *et al.* (2004) (*N*=22) the only E&W SbC related case study reviewing police shootings, Lord (2000, 2001, 2012, 2014) (*N*=768) US based post incident study, with Hutson *et al.* (1998) (*N*=46) and Mohandie and Melot (2010, 2011) (*N*=55) a US based review of officer involved shootings (Appendix B).

Within E&W, the police may lawfully use force and in rare circumstances this may be lethal. In 2017/18 it is conservatively estimated there were over three million public/ police interactions in the MPS[8] (MPS, 2019). Not every police/public encounter will result in force being used, but where force is used, officers have a legal obligation to record that instance.

UoF data is published by each of the 43 police forces within E&W. It collates any UoF by police irrespective of role i.e. unarmed, STTO or AFO into one dataset. This dataset has initially been selected due to its accessibility and availability to the researcher and although useful, this quantitative data alone does not add context or rationale to UoF incidents. The quality, validity and reliability of this published data will be discussed in section 3.5.2.

In 2018/19 there were 132,410 recorded instances where MPS officers reported the use of force. The entire dataset is worthy of a future study. For the purpose of this thesis it will only be used to bring operational context to the research survey questionnaire, permitting a comparative analysis of unarmed versus armed paradigm and contrasting scale of tactical approaches.

[8] Estimated using aggregated call and body worn video data from MPS Force Management Statement (MPS, 2018).

Figure 5 shows the MPS UoF dashboard summarising the type of data utilised within this study.

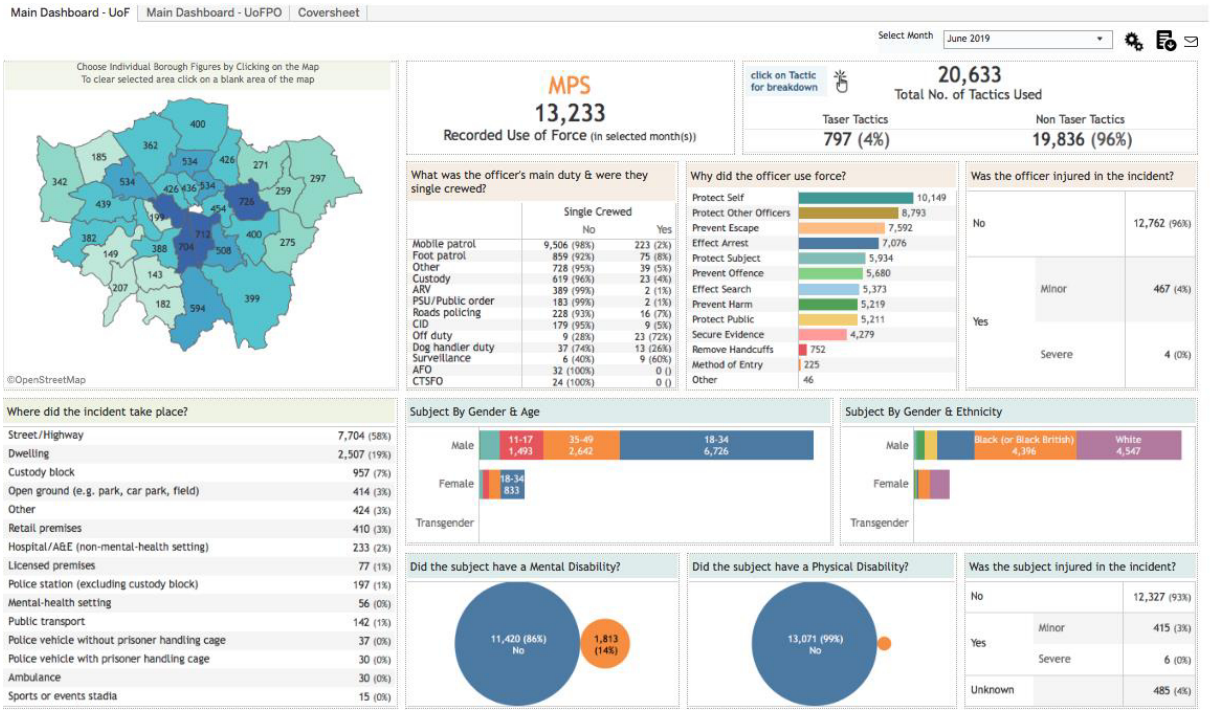


Figure 5. MPS Use of Force data 2018/19 (MPS, 2019).

The MPSUoF database contained 132,410 entries, with 272 fields, generating a potential 36m values. The MPSUoF data fields included: time, location, subject demographics, type of police duty, impact factors, UoF rationale, information relating to injury to subject or officer, physical or mental disabilities and outcome (Appendix C). For this analysis, utilising the raw published data the researcher coded and transferred the complete dataset onto IBM Statistical Program for the Social Sciences (SPSS) (Appendix D).

3.5.1 Data Quality

An assessment of the characteristics of any data must be made to establish its validity, reliability, usability and therefore its quality. The integrity of the data can be evaluated by its accuracy, consistency and legitimacy across the duration of the records (Bryman, 2008; Creswell, 2009; Fowler, 2013). The quality and integrity of data can be assessed against its completeness, uniqueness, timeliness, validity, accuracy and consistency (Babbie, 1990; Bryman, 2008; Creswell, 2009; Fowler, 2013).

Completeness may be further defined, where all the significant variables or mandatory information are included and recorded (Wand and Wang, 1996). As each variable may not necessarily be relevant to the circumstances, there may be instances where data has not been entered. For example, missing data points and variables may have been omitted or, for unknown reasons not entered. The researcher has identified that some of the incidents listed within the sample are subject to a post incident procedure (PIP) investigation by the IOPC. As a result, due to ongoing legal and anonymity issues these were not recorded at the time by the officer using force. The MPS have acknowledged this matter and are implementing a solution to ensure this UoF data is recorded at the earliest possible opportunity (Nelson, 2018).

Police officers are under a legal and ethical duty to record any use of force at that time. To administer recording accuracy; each record is examined by a supervisor before submission to a central panel for validity and consistency checks. Each MPS officer now wears body worn video (BWV) and must commence recording on route or arrival at an incident. Data is not collated on each interaction, however the 50k uploads of BWV per week give an indication of the volume of MPS encounters (MOPAC, 2018). Whilst not impossible, due to both internal and external scrutiny it is unlikely that a UoF encounter would not be recorded. It is therefore a working assumption the UoF dataset is largely reflective of MPS UoF encounters for 2018/19. Data validity and reliability are discussed in detail in section 3.5.2.

3.6 Data Analysis

This section will summarise the quantitative data analysis techniques applied to examine the MPSUoF data and survey questionnaire. It will detail the rationale and various statistical tests applied to the examine the variables and groups.

Using SPSS statistical software, descriptive statistics, such as frequency analysis and contingency tables were employed to understand the distribution of data; with inferential statistical tests used to explore relationships through t-tests, Spearman's rank coefficient analysis and bivariate correlation. This section will summarise the rationale and various statistical tests applied to the survey questionnaire, variables and groups.

Where the survey questionnaire permitted a free text response, this section will discuss the qualitative analysis of open questions in the survey questionnaire.

3.6.1 Parametric and non-parametric testing

The type of data within this research has meant that consideration needs to be given to the nature of statistical tests applied. Where the data is continuous or scalar e.g. age, there is a potential for parametric tests to be used. To ensure reliability each test has assumptions where specific conditions must be met e.g. a *t-test* requires two normally distributed independent samples with homogeneity of variance.

Where the data is ordinal, whilst this variable may convey qualitative meaning caution must be exercised when attempting to derive statistics from the results. There has been some debate regarding the application of parametric tests on ordinal data and the treatment of ordinal scale as a numerical value (Albaum, 1997; Harwell and Gatti, 2001; Knapp, 1990; Yusoff and Janor, 2014). However, within this thesis equivalent non-parametric or 'distribution free' tests have been applied. As they do not require normally distributed samples and have fewer validity conditions, they are considered more liberal. These tests may be used on ordinal or ranked data, with smaller sample sizes and, where the data is skewed, the central tendency may be better represented by the median.

Whilst the benefits of a non-parametric test may be initially be appreciated, the result is a loss of 'efficiency'. Parametric tests are considered to have greater 'statistical power' to detect a significant effect and reject a hypothesis, with a lower probability value than a non-parametric equivalent. Where non-parametric tests are utilised on ordinal data within this thesis, caution will be taken in interpreting any results or subsequent associations. Whilst inferences may be drawn, without further research, the ordinal nature of the data does not permit statistical associations to be confirmed.

3.6.2 Chi-Square test (χ^2) and Fishers Exact test

The Chi-Square non-parametric statistical test may be utilised in two ways:

- as a 'test of independence' to establish if the relationship in observed frequencies are a result of chance or the influence of another variable
- testing the 'goodness of fit' to a model, through examining the data distribution to measure a between an observed and hypothesised expected value.

Within this thesis, the Chi-Square test has been used in contingency tables to statistically approximate the difference in answers between groups e.g. AFO v STTO, and if this has occurred by chance or is the influence of another factor. Whilst Chi-square is one of the simplest parametric tests to apply, there are conditions which limit its use. The sample data must be independent, contain at least 50 values with frequencies of 5 or more observations. If these conditions are not met, the χ^2 value will be misleading and the null hypothesis may be wrongly rejected. Academics argue whether there is a necessity to comply with some of these limiting factors; however, it is apparent these conditions may only be disregarded where the sample is sufficiently large e.g. >1000 and with an overall frequency in 20% of cells $\leq$5. Where the sample did not meet the Chi-Square conditions needed to enable an accurate calculation, the Fishers exact test has been applied to examine the significance of the association. As it calculates the deviation from the null hypothesis exactly the Fishers exact test is more effective than the Chi-Square approximation test when using smaller samples. Both will be reported using the χ^2 symbol.

3.6.3 Mann-Whitney U test

The survey questionnaire produced Likert type scale non-parametric ordinal data. As the assumptions for employing the t-test are not met; to statistically examine the data the Mann Whitney U test (M-WU) is utilised in order to compare each sample group e.g. do STTO and AFO responses differ? Whilst a *t-test* compares the means, the M-WU test analyses the medians to rank the scores for each question across the groups and therefore the distribution of any scores does not affect the result.

This test has set assumptions which are met for use in this thesis e.g. the sample taken from the population is random, they are mutually independent and an ordinal scale is used. If a statistically significant difference between the groups is identified, the mean (*M*), with direction of difference and standardized test score (*z*) will be reported to quantify the result (Pallant, 2016). As previously discussed, where comparison of the means is analysed, the results should be treated with caution given the nature of the ordinal data.

3.6.4 Correlation

Where police officers may employ or deliberately not utilise tactics at their disposal, a statistical analysis enables a comparison between the STTO and AFO response. Two types of statistical correlations have been performed to determine the strength and direction of any relationship; and dependant on the type of data either may be used or reported within this thesis.

Both methods report values from +1 to -1, where zero is no correlation and indicate the positive or negative direction of any association between variables or groups. For continuous interval type data, Pearson product movement correlation coefficient (*r*) was utilised to define any linear relationship and the strength between the variables. Initial analysis was conducted to ensure the normal distribution of data, it was linear and examined for homoscedasticity.

Several survey questions required participants to rank their response to a scenario and place in order the tactics which may been used during an encounter. Although the Pearson product-moment correlation would normally be applied to interval or ratio data, where any Pearson correlation assumptions are violated e.g. not normally

distributed, the alternative nonparametric test would be applied. The Spearman Rank-Order correlation coefficient was utilised to analyse any ordinal nonparametric data and subsequently define any monotonic relationship. Where any ranked variables had 'ties' or equal values, to enhance confidence in the p-value the full Spearman's Rank-Order Correlation coefficient (rho or r_s) formula was utilised. (Kinnear and Gray, 1999; Pallant, 2016; Clef, 2013; Rees, 2000).

3.6.5 Significance, Effect size and shared variance

The significance level (*p*-value) indicates how much confidence may be placed in the results, whereas the *r*-value (*r, rho* or r_s*)* defines the strength of any relationship. The sample size may influence the *p*-value; if it is small i.e. *n*=30 there may be moderate correlations that do not have any statistical significance at the $p<.05$ level, whereas for large samples *n*=>100, a smaller correlation where *r*= .2 may attain statistical significance. Any positive or negative effect size (*r* value) will be reported using the Cohen (1988, pp.79-81) guidelines:

Small	*r* = .10 to .29
Medium	*r* =.30 to .49
Large	*r* = .5 to 1.0

Squaring the *r*-value enables a calculation of the 'coefficient of determination' and defines the percentage of shared variance between two variables.

3.6.6 Grouped frequency analysis

Some published data is set within grouped tables, aggregating the frequencies and classifying them for presentation. The survey questionnaire has also gathered data, which using the Likert scale, has grouped some of the demographic information from the sample. Both reduce the ability to analyse raw data therefore, where appropriate, an estimated mean and median from the grouped data have been calculated to comparatively analyse this data between the sample and population.

3.6. Type I and Type II errors

Statistical tests are utilised to understand the real-world condition if there is an 'effect' within the population. As the *p*-value is established on probability, where a result indicates statistical significance, it may not be mathematically possible to validate a research hypothesis with complete certainty i.e. 100%; therefore, there will always be a probability of reaching an incorrect assumption when accepting or rejecting the null hypothesis (H_0).

A Type I error or 'false positive' occurs when a true null hypothesis is incorrectly rejected and findings are reported as significant, when they actually occurred by chance. The probability of a Type I error is represented by the alpha level (α) and the *p*-value below which the null hypothesis is rejected. Conventionally, the probability of making a Type I error and rejecting the null hypothesis has a *p*-value of 0.05 (or 5%). For example, presuming there is no effect in the population, where a test is conducted 100 times, it may be expected that on five occasions a large enough test statistic is generated to believe there was a genuine effect, when in fact there was not. To reduce the possibility of a Type I error, the *p*-value may be decreased e.g. *p*-value of 0.01 would denote a 1% probability of committing a Type I error. However, the implication of using a lower alpha level also reduces the probability of identifying a true difference if one really exists and risking a Type II error by accepting the null hypothesis.

Type II or 'false negative' error occur where a null hypothesis is not rejected when it is actually false e.g. when a researcher incorrectly assumes there is not a significant effect, when there really is one. Cohen (1992) suggests the maximum acceptable probability for a Type II error (Beta or β-level) is 0.2 (or 20%). For example, if 100 samples taken from a population in which an effect exists, the consequence of a Type II error is the effect would not be detected in 20 samples, or 1 in 5 valid effects.

The chances of committing these errors are inversely proportional e.g. decreasing Type I error rate increases the probability of a Type II error rate. However, Howell, (2012) argues as the relationship between the two errors is not based upon the same assumption e.g. Type I there has to be no effect in the population, whereas Type II

the opposite is true and an effect has been missed, and therefore the exact relationship is normally left to the researcher to decide.

It is acknowledged that the use of multiple bivariate tests may increase the likelihood of a Type I error. In reducing the probability of accepting an affect as genuine i.e. making α smaller, the researcher considered this may increase the probability of rejecting a genuine effect and producing a Type II error. Therefore, in considering this the statistical analysis utilised within this thesis will be the conventional criterion *p*-value of 0.05 (or 5%) throughout.

3.6.8 Qualitative response analysis

The design of the survey draft is detailed (3.8.2) where the use of qualitative and quantitative question styles were considered.

It is acknowledged the construction of the questionnaire survey means it is primarily utilised as a quantitative data collection tool, with a number of open-ended questions for clarification at the end. Whilst using a combination of methods permits concurrent examination of a problem, it reduces the researcher's ability to use a single software solution e.g. SPSS or NViVO. To examine the open-ended questions a number of methods were considered to ensure the data was correctly captured and to reduce the time burden for the researcher (Braun and Clarke, 2013; Creswell, 2009; Denscombe, 2007; Morris and Mathers, 2009).

The Bristol Online Survey portal was used as the primary questionnaire survey data input tool and on completion of surveying participants their Likert and free text responses were automatically collated within a MS Excel sheet format.

For the qualitative responses, the researcher manually examined and coded each free text response within the Excel sheet for analysis (Appendix G). Initially, 'open' codes were attached to each response line to classify what the data may be indicating. Aware of researcher subjectivity in assigning codes to each response the process was both iterative and reflective. In examining the quality of responses 'data saturation' was achieved, which may be defined as where "no new information or themes are observed in the data" (Guest, Bunce, and Johnson, 2006, p. 59),

indicating to the researcher that data collection may cease (Faulkner and Trotter, 2017). Once an initial pass was completed the researcher reviewed the entire set of responses again to assess the quality and accuracy of the assigned open codes, and where needed amended them to ensure consistency.

At the time of coding, it was apparent that some participants responses were not confined to answering the survey question and whilst minimal in number they appeared to utilising the survey as a cathartic method of highlighting another issue. Following completion of the open coding process, as this research was created to examine an emerging subject with a limited sample size, and whilst no new themes were identified, caution should to be paid to any claim of 'total' saturation. Each response has been retained and the researcher may consider to utilise those which were out of scope for this research within a future study. On completion of the open coding process, each were grouped into larger 'selective' codes to categorise the data. This process is presented in the Findings (Chapter 4).

3.7 Survey questionnaire study

Selection of the appropriate method to collate data is central to achieve the aim and assist in answering the research question. Consideration of other methods was given and whilst every method has its positive attributes, there are also limiting factors in their use. The research survey questionnaire is located in Appendix E.

A survey questionnaire was chosen for this research for a number of reasons. As the this can be delivered remotely, it is considered an impartial, efficient method, with potentially a broader reach. In comparison with other more time intensive approaches, a survey questionnaire can be used to collate both quantitative and qualitative data in a more efficient way for subsequent thematic and statistical evaluation (Braun and Clark, 2006; Buckingham and Saunders, 2004; Cockcroft *et al.*, 2018). This approach enables the research process to be easily reproduced, is the most practicable means of collating data from a large quantity of participants and reduces researcher influence or bias (Cockcroft *et al*., 2018; May, 2011).

As a cost and time efficient method, initial consideration was given to conducting an electronic survey questionnaire of staff and to mobilize interest this could be conducted over several 'waves or phases' (Denscombe, 2007). However, a resultant effect of the 'interview society' is survey fatigue or participant apathy, which affects the overall completion rate (Baruch and Holtom, 2008; Kaplowitz, Hadlock and Levine, 2004; Silverman, 1993). Regularly inundated with a variety of work-based survey questionnaires, especially when combined with an active or demanding role, this may arguably be a contributory factor in low completion rates. Whilst survey fatigue or completion rate may have negative impact upon this approach; where police officers are offered anonymity, it creates an environment where they are freely able give open and honest responses (Bradburn *et al*., 2004; Cockcroft *et al*., 2018).

One important purpose of a survey questionnaire is to sample the population and enable statistically correct inferences to be drawn from it. By using a properly defined and structured instrument, with a validated scale, it enables the collection of data relating to a specific research area. This permits statistical tests to validate the results and ensure they are characteristic, justifiable and a reliable representation of the sample (Creswell, 2009; Forza, 2002). A limitation of this survey questionnaire approach is there is only one instrument to collate data. The ability to alter the style,

question phrasing or to develop upon a valid line of enquiry with the participant is removed. There appears a higher probability of a wrong response in self-administered survey questionnaires due to misinterpreting the question and a lack of personal interaction may also impact on the completion rate (Ivankova, 2015).

This research survey questionnaire aims to establish whether there is a difference in response to a set of circumstances between STTO and AFO sub-groups, understand any variation and analyse it. The survey questionnaire design enables responses to be statistically measured; to assess heuristic and behavioural characteristics, commonality of tactical response between groups, examination of the subject's 'role' within a conflict situation and understand the influence training or equipment may have. In contrast to the electronic delivery method, a benefit of surveying the sample whilst at a training centre is they are in a position to complete the survey questionnaire immediately and not defer it (Selinsky, 2015).

In summary, to meet the aims within the timeframe, the researcher believed this strategy enhances the 'feasibility, practicability and validity' of this research (Francis, 2000, p.42).

Defining the population and sample group.

The MPS workforce comprises of 30,390 police officers and 28,953 are operationally deployable (Home Office, 2018a). Consideration was given to surveying all MPS police officers. However, to maximise understanding, the researcher refined this to the operational STTO and AFO qualified police officers who had received additional training and were potentially experienced in the use of force beyond a 'traditional' unarmed police officer. In selecting this group, the researcher considered this sample may provide a greater depth of knowledge or information to realise the research objectives. Additionally, in using this sample they could understand and relate to the topic area more easily, providing informed operational based judgements compared to those in a non-operational role e.g. office-based support staff (Silverman, 2016). Within the MPS a proportion of officers are trained in the use of Conducted Electronic Devices (CED), commonly referred to as 'TASER' (Table 1).

MPS STTO trained	Population	Sample	% Pop.
	(*n*)	(*n*)	
'Unarmed' STTO	2,369	74	3.12%
AFO	2,520	241	9.56%
Total STTO population	4889	315	6.44%

Table 1. MPS STTO trained population (MPS, 2019; Home Office, 2018a).

Therefore, the potential population or 'sampling frame' (Honness, 2015, p.29) for this research was 4889 MPS STTO trained officers; comprising of 2369 'unarmed' STTO and 2520 AFOs who have TASER as an additional 'less lethal' option (Home Office, 2018a; MPS, 2018b).

3.71 Survey questionnaire sampling method

Each participant was STTO trained and had been notified by their manager to attend either mandatory refresher training or a course, naturally dividing the population into groups or 'clusters'. Each officer had an ability to either self-select or deselect their attendance at training and this sample was drawn at a particular point in time when each participant was present at the training centre. Therefore, this may be may be considered a simple form of 'random cluster sampling', selecting desirable characteristics of a population to meet the objective of the study and in the context of this research brings some additional benefits (Bryman, 2008, Buchanan and Bryman, 2009). As MPS officers are geographically spread across London, STTO trained officers are brought together into groups for mandatory training by a central unit. This produced a mix of staff with differing skill levels e.g. STTO or AFO and experiences, where each group or 'clusters' were then requested to participate in this research. Each member of the STTO population had an equivalent probability of being chosen to form part of the sample group on that day. Whilst this type of sampling is considered more time or cost effective and logistically feasible; it also requires greater sample sizes and is not considered as precise as a truly random or systematic random sample (Bryman, 2008, Buchanan and Bryman, 2009; Creswell and Poth, 2017).

To minimise self-selection bias, the survey questionnaires were conducted over a range of days and during several weeks in February and March 2019. In minimising selection bias this type of sampling process may be considered a reliable method to

gather information; it augments internal and external validity, enabling any results to be considered representative of the whole population (Buchanan and Bryman, 2009; Bryman, 2008; Morris and Mathers, 2008). However, caution is required to ensure the sample is truly demonstrative and appropriately random to permit legitimate assumptions to be drawn (Bryman, 2008; Morse, 2010).

The survey questionnaire was offered to 320 officers and completed by 315 (98.4% response rate), representing 6.48% of the available STTO population. Whilst this may appear low, it could be considered valid and representative. At a 95% confidence level, the population parameter for this sample (*n*=315) produced a margin of error or confidence interval of ±5.34[9]. For example, if the arithmetic mean calculation or true value to a particular question was 32%; with 95% confidence, the answer would be within ±5.34% and therefore between 27.34% and 37.24%. It is argued, this sample may be considered characteristic of the population and subsequent conclusions may be believed to be valid.

[9] Calculated using 'Sample Size Calculator' (Creative Research Systems, 2012. Available at http://www.survey questionnairesystem.com/sscalc.html. Accessed 04/06/19)

3.8 Survey design and construction

Whilst a survey questionnaire is a systematic method to generate a sizeable quantity of data, a limitation is the ability to check, explain, probe or examine the veracity of responses (Denscombe, 2007; Frith and Gleeson, 2008). The research survey questionnaire is contained within Appendix E.

3.8.1 Likert scale

The survey questionnaire utilises the Likert scale to gather responses and develop understanding of a participant's assessment or opinion. This popular scale is is simple to configure, creating a robust scale that offers improved reliability for an equivalent number of scale items (Cummins and Gallone, 2000; Page-Bucci, 2003; Tittle and Hill, 1967). Whilst the question design and Likert anchors enhance the scale responsiveness and validity, consideration must also be given to the scale range.

As a scale range increases, its sensitivity and therefore accuracy to record a greater variance in response increases (Diefenbach *et al*.,1993). This increased scale moderates skew effect and 'extreme score bias', reducing inhibited responses created by insufficient scalar points (Dawes, 2007, Finstad, 2010). Arguably, whilst larger scales may be more accurate, the difference is not statistically significant with a diminishing reliability return (Dawes, 2007; Nunally, 1978; Revilla *et al*.,2014). Dawes (2007) further argues 5, 7 or 11 point scale are comparable as each display a similar kurtosis or skewness characteristics and 'no scale format produced data with markedly lower variance about the mean' (Dawes, 2007, p.75).

While some participants are consciously aware of their opinion, others have yet to consider or form a view on it. Research indicates a 'don't know' or 'not applicable' option may be selected even if participants have an opinion (Bishop *et al*., 1983; Schuman and Presser, 1981). Influencing factors include limited information within question or Likert anchors, the participant's ability to process the information or even time restrictions. Contrasting the burden of a considered response to choosing the effortless option, 'satisficing' creates a loss of data (Kronsick *et al*., 2002). Conversely, where participants are consciously unaware of their opinion, they may

still support one viewpoint and by omitting the ‘don’t know’ option it encourages a decisive response (Bradburn & Sudman, 1988).

Reviewing the literature and supervisor feedback the researcher considered including a ‘not applicable’ option for selected questions (Converse, 1964; 1970; Krosnick *et al.,* 2002; Oppenheim, 1992). Police officers will, in the right circumstances, freely communicate their opinion (Reiner, 2010; Selisny, 2015; Waddington, 1999). However, the researcher considered this may also inhibit an officer’s ability to accurately communicate tactical responses; therefore, by including this ‘not applicable’ option, it increases validity by preventing participants being compelled to select an inappropriate response.

As officers were surveyed during mandatory training attendance, there were practical time constraints considered during the design of the survey questionnaire. Completing a larger scale survey questionnaire is considered more challenging and time consuming. Acknowledging the benefits of a larger scale; in smaller sample sizes, data distributed across this larger range may reduce the effective quantity required for some statistical tests. This may necessitate an aggregation process to group the sample into suitable quantities for analysis, effectively rendering the rationale for choosing a larger scale invalid.

3.8.2 Survey draft

Using a standardised question and style approach prevents the influence of personal or other factors which may ‘contaminate’ the results (Denscombe, 2007). To increase completion rate and reduce issues created by poor questions, phrasing or layout, the survey questionnaire and instructions were proof read by peers and the researcher prior to use (Braun and Clarke, 2013).

The use of both open ended and closed qualitative or quantitative question styles was considered within the draft, allowing the participant to enter free text qualitative detail where necessary. Whilst this combines two methods concurrently to examine a problem, it does not permit answers to be easily coded within a singular software solution e.g. SPSS or NViVO, increasing the time factor for the researcher (Braun and Clarke, 2013; Creswell, 2009; Denscombe, 2007; Morris and Mathers, 2009).

By examining other comparable research and using the literature review, an initial draft survey questionnaire was developed to meet the research objectives.

The survey questions were adapted from Hendy (2019) (Appendix I), a study into the use of force in New Zealand and modified by the researcher for the E&W policing context. Hendy's (2019) research studied the effect of conflict and coercive resolution methods as the New Zealand police transitioned from an unarmed to an armed service. In comparison with other international studies, the New Zealand system identified closer with the E&W policing context. Adapting Hendy's (2019) study, this developed a framework for a draft survey questionnaire, examining the response to a variety of scenarios and analysing the behavioural, situational or conflict stimulus characteristics of the sample.

The draft survey questionnaire was tested on officers (*n*=10), with feedback assessing suitability for content and question style. Revisions were made to moderate the complexity and survey questionnaire length. Acknowledging the survey questionnaire may be considered challenging to complete, in comparison with other approaches, the use of a detailed questionnaire and greater number of participants was considered necessary to achieve the research aims.

The aim in using a mixed method approach is to minimise any limitations and therefore required the survey design to permit the participant to provide the fullest possible answer (Barnett, 2002; Bell, 2010; Bryman, 2008). The choice of survey questions was based upon the central research and sub-questions; to examine police decision making and understand the officer's use of force in a range of scenarios, and this is discussed in the next section.

3.8.3 Question structure and rationale

This section will discuss the structure and rationale for adopting questions within the research survey questionnaire, which is contained in Appendix E.

A number of demographic questions (Q1 to Q13) were set in this survey questionnaire to establish if certain factors affected an answer or opinion. By collating demographic data and comparing a number of the demographic features of the sample with the population it also provides a rudimentary check on the validity and reliability of the sampling method.

A range of the most encountered 'everyday' role related tasks the sample group could be expected to perform were analysed. Using the Likert scale to score satisfaction Q14 to Q16 sought to understand the reaction or relationship to a stimulus or conflict situation and whether this met any established behavioural typology for police officers (Hendy, 2019; Hochstedler, 1981; Muir, 1977). Where officers spontaneously respond to a developing incident, Q17 and Q18 intended to analyse the heuristic or behavioural characteristics which may influence decision making or subsequently contributed to their proficiency in resolving conflict (Bayley & Garofalo 1989; Braithwaite 1998; Hendy, 2019). Q19 to Q21 sought to identify commonality of tactical responses between groups, positive or negative implications of certain strategies or approaches and identify any limitations.

The literature review identified the subject's role within a conflict situation and how the label or language used to denote a subject may affect the officer's response; especially if there is a change in status from witness to suspect, or conversely if reversed (Hendy, 2019; Lipsky, 1980; Snipes and Mastrofski, 1990). Therefore, Q21 analyses the response to conflict and whether this differs between sample groups when presented by a witness, victim or an offender.

Continuing, the next four questions (Q22-Q25) each presents a scenario which increases in scale of threat or risk, either presented by an individual or towards another. This was used to define and understand the scaled response but also enable analysis between the groups. Using the National Decision Model tactical options as a basis, it required the participant to rank the tactical response option

chosen in order of use (College of Policing, 2019). In Q22 the subject was defined as a ‘suspect’ and in Q23 as a ‘victim’. This format was repeated for questions Q24 and Q25, however the question was reversed, requesting participants to only select options *not* utilised. This was used to statistically verify if there was any inconsistency when compared to questions Q22 and Q23 (Hendy, 2019; Lipsky 1980; Snipes and Mastrofski, 1990).

The final question (Q26) comprised of four sub-questions used to identify issues training or equipment enabling direct examination between the groups. This also permitted a comparison with other questions, enabling associations to be made which may have an influence on decision making or ability in resolving conflict e.g. training or equipment.

3.9 Validity and Reliability

Validity will inform how suitable a test is within a specific context, whilst reliability suggests how dependable a test result is.

Validity refers to an objective ability to test the credibility of a characteristic and measure the analytical claims made about it. There is not a single measure of validity for a scale, but the construct, criterion and content are some of the methods used to analyse its validity (Cresswell, 2017; Creswell and Poth, 2017; Denzin and Lincoln, 2011; Silverman, 2016). The intention of the survey questionnaire is to examine police decision making and understand an individual’s use of force in specific circumstances. Using correlation to analyse internal consistency of the responses, where participant’s answer questions in a constant manner it can establish construct validity. The survey questionnaire broadly examines the role satisfaction, motivation to intervene in an incident and training level for each group; with the majority of questions focussing on role related responses to a number of escalating scenarios. By examining these behaviours and measuring the difference in responses due to role, training or equipment, it provides content related validity.

Based upon responses, this research seeks to identify and measure any difference between the sample sub-groups. Statistically testing the responses to identical scenarios between the groups enables any relationship between sub-groups to be

understood and confirms the underlying criterion-related validity. The survey questionnaire broadly compares the role satisfaction, motivation to intervene in an incident and training level for each sub-group; the focus of the survey questionnaire was upon role related responses to a number of escalating scenarios. By examining these behaviours and establishing if there is a difference in responses due to role, training or equipment, it provides content related validity.

Reliability indicates the consistency of an instrument in measuring an attribute. This may be determined by the amount of stability displayed when the test is replicated in identical circumstances or how unconstrained it is from random error. There are a number of methods to examine this, including retesting participants on different occasions using the same scale, alternating the scale wording or through the use of 'internal consistency' measurement of attributes; and then establishing a correlation coefficient to statistically evaluate the reliability of any scale used. An instrument with a higher internal consistency reliability coefficient implies the test scale is homogeneous and comparable to the content of other items within it (Cresswell, 2017; Creswell and Poth, 2017; Denzin and Lincoln, 2011; Pallant, 2016; Silverman, 2016).

The Chronbach's Alpha (α) test was utilised to provide a statistical indication for the internal consistency reliability coefficient of scale elements within this survey questionnaire. Although this measures how the items complement each other, it underestimates the lower bound for the true reliability. Whilst there are other estimators, Chronbach's Alpha is a less complex indicator to employ when the scale elements are larger. There is debate about the actual Chronbach's Alpha value required for particular sample and scale sizes; lower scores may be defined 'good' (participants <100, scales <10 items), however within this thesis a α=0.7 score value is utilised as a minimum to indicate the stability of each set of questions (Briggs and Cheek, 1986; DeVillis, 2012; Heppner *et al*. 1992; Kaplan and Saccuzzo 1997; Nunnally, 1978).

To understand and measure any relationship between STTO and AFO this research seeks to statistically test the responses to identical scenarios between the sub-groups. This process will confirm the underlying criterion-related validity.

3.10 Ethical concerns

This study respected the research ethical values, established by the British Society of Criminology within the Code of Ethics approved by the Institute of Criminology Research Ethics Committee.

An Ethics application was submitted in accordance with stringent guidance set by the Canterbury Christ Church University (CCCU) Faculty Board. This submission was compliant with the relevant British Society of Criminology Code of Ethics (2015). This research received initial approval from CCCU Faculty Board on 5th November 2018 (Appendix F).

3.10.1 Organisational and Individual Informed consent

The researcher completed an Information Sharing Agreement (ISA) between the MPS and CCCU. This detailed requirements for accessing MPS data and outlined the timescales and dissemination of research findings. Specifically addressing data security, GDPR and FOIA arrangements, the agreement was signed by the MPS, CCCU and the researcher.

Following CCCU Ethics protocols, during attendance at the training centre each officer was given a verbal briefing detailing the extent of the research. Each participant confirmed their individual voluntary participation, by completing a Participant Information Sheet and separate 'opt-in' CCCU consent form. This process met British Society of Criminology Code of Ethics protocols.

The researcher maintained a secure master register within an encrypted file, allocating a unique reference number (URN) to each survey questionnaire and removed the consent form with the participants name. This enabled an 'opt-out' process, permitting an officer to subsequently have their survey questionnaire responses removed from the dataset at any stage.

3.11.2 Role Conflict

The researcher is aware of their ethical positioning in conducting this study. There is a likelihood that some participants have worked with the researcher in a previous professional capacity and how this may influence the outcome (Braun and Clarke, 2013; Garton and Copeland, 2013). However, to demonstrate transparency or prevent coercion any contact was organised via senior MPS managers. To create the correct environment the researcher wore civilian clothing. No reference was made to the researchers rank and only first names were used. This aimed to minimise the impact of any previous working relationship, enabling the participant to express their thoughts freely and not give any answer they perceived the researcher wanted (McLeod, 2007).

3.11.3 Data Protection and Storage

This research was subject to a specifically authorised ISA and Research permission protocol between the MPS and CCCU. The MPS legally held this data granting express permission for it to be utilised for the purpose of this research. The data was accessed and processed in the manner agreed within the ISA, cognisant of GDPR and FOIA requirements. The ‘raw’ MPS electronic record data related to TASER, Baton Gun and Firearms discharges. The data was processed with fields extracted from MPS systems onto an Excel sheet for subsequent analysis using SPSS software. Any personal data was redacted with only the URN retained to permit a more detailed examination of the record if required. Transfers or storage away from the MPS system, were conducted in accordance within the MPS agreement. No paper copies were created.

3.13.4 Anonymity and Confidentiality

This is vital and significantly important. With the exception of force and role, no data identifying any officer concerned in the use of force or any other individual who completes a survey questionnaire will be disclosed, without a specific requirement to reveal and only with explicit authorisation. A full risk assessment was compiled, assessed by the researcher's academic supervisor and authorised the CCCU head of department. With the exception to the sensitivities referred to previously, there were no anticipated physical risks to any person involved in this research.

3.12 Limitations and Assumptions

3.12.1 Researcher Bias

This research will be analysed within the context and culture of policing within United Kingdom. This has a democratic system of government where by consent the population is policed by a largely unarmed service within the law and legal principles.

The insider role enabled valuable relationships with the MPS and officers to be developed easier than an outsider. In comparison with an outside researcher, whilst officers may be candid with an experienced peer, they may not fully explain experiences or actions in sufficient detail. To reduce personal bias or subjectivity, a pre-prepared rationale was read out to participants prior to commencing the survey questionnaire. As a serving police officer, it is acknowledged personal beliefs may affect this research, but may also be ‘interpreted through the researcher's frame’ (Brown, 1996, p.16). Therefore, by ascribing meaning to the elements of any data and then determining, whether consciously or unconsciously the relevance and importance of it, it may always have an element of subjectivity.

As the researcher became close to the data and literature relating to this study, any judgement or assessments were left to the researcher to make. In selecting data to fit personalised pre-existing theories, opinions or presumptions; that subjectivity or bias may influence the inclusion or exclusion of data or literature, to balance a particular theory or evidence favoured by the researcher and therefore compromise the validity of it (Brown, 1996; Maxwell, 2012; Mehra, 2002; Miles and Huberman, 1994).

As part of the insider-outsider dilemma, ethical integrity is an essential trait to maintain the validity of any research. As an insider conducting research, it is critical to maintain credible objectivity; not manipulating data to fit a research objective or individual bias, but using the context to understand and enable valued accurate judgements of what is ‘seen and heard’ (Brown, 1986; Maxwell, 2005; Mehra, 2002). Whilst there may be personal, situational or cultural influences present, removing them entirely is almost impossible (Maxwell, 2005). The researcher recognises the influence bias has on the objective interpretation of data and subsequent impact this has on validity.

Particular to law enforcement or use of force, specific operational components may require judgment by the researcher and their experience was viewed as an asset to assist this study. Characterised as researcher subjectivity, as an 'insider' it may be difficult to remain totally objective in navigating through complex information or context which otherwise may not be understood. The research methodology and use of a survey questionnaire provide additional benefits, by removing the subjectivity in interpreting answers and use of statistical data analysis.

3.12.2 Limitations and Assumptions within this Research

The scope and interpretation of any research questions may be considered a limitation of any study. The research intention was to understand whether there was a difference in decision making and subsequent use of force between the groups in dealing with a PMI. Whilst the survey questionnaire approach was limited by the question style, as discussed earlier a benefit was the removal of researcher subjectivity. By employing this balanced approach, it aimed to generate a broader understanding of the officer's decision-making process through statistical analysis.

Whilst statistical correlations may be calculated, without further examination causal associations cannot be assumed. The significant amount of MPSUoF quantitative data limits contextual understanding of the encounter and range of tactical options utilised or discounted. The analysis of the MPSUoF dataset is constrained by the variable fields and quality of data recorded within it. The quality and completeness of the MPS dataset is reliant on working practices or policies, some of which may have previously resulted in certain variables not being recorded. The introduction of an electronic version, requiring entries in specific fields, appears to have minimised the quantity of missing variables. When combined with enhanced internal and external public scrutiny, it is considered improbable a use of force encounter would not be recorded.

To enhance the validity, the researcher evaluated their own processes against comparable studies to benchmark consistency (Waddington *et al*., 2009). Assisted by the officers voluntary participation, after answering the survey questionnaire they consciously engaged with the researcher on the subject matter. Officers willingness to understand the phenomenon may be considered beneficial to the integrity of the research and therefore enhancing the validity of it.

The time-consuming nature of a sequential design approach may create difficulties for the researcher, especially during the qualitative phase to interpret complicated or unclear results and relate these to the quantitative findings. Due to time constraints, it was not feasible to test any findings within a controlled environment e.g. training. This provides future research opportunities to analyse officer performance during scenario-based incidents and enhance training curriculum or policy. A working hypothesis is there is not a significant difference in STTO and AFO performance their role (Garcia, 2003; Kakar, 2002; Nickel, 2015; Waddington, 2009). Role specific functions may limit an officer's operational capability and subsequently any response to threat or risk may slightly differ.

The next section will present the findings from the qualitative survey questionnaire and analysis of the MPS use of force quantitative data.

4. Findings and Analysis

This thesis is seeking to examine the UoF on a vulnerable 'high risk' subject, in mental crisis and be presenting a threat to themselves or another. Where the risk of harm presented by that subject is significant, police may have to use force and on rare occasions this may be lethal.

This thesis comparatively analyses UoF by the sample sub-groups. This first section of this chapter will report the findings of the research survey questionnaire. Officers motivation and behavioural reaction to conflict stimulus and the effectiveness of any tactical response will be categorised. Using the research survey questionnaire, it will seek to understand how officers develop an operational proficiency to resolve conflict. The second section will analyse the MPSUoF dataset. The research findings will be discussed and contrasted against existing literature in Chapter 5.

Where appropriate, hypothesis tests will be employed to test for significant statistical differences between the STTO and AFO sub-groups e.g. arithmetic mean. Therefore, within this analysis, the null hypothesis (H_o) states there is no difference in the response between STTO and AFO trained officers; whilst the alternate hypothesis (H_1) is there is a difference between the sample groups. Only 'statistically significant' results will be reported, analysed and interpreted within this section. The specific tests applied to the data are detailed within the statistical analysis section (3.10). All test results are reproduced within Appendix G.

4.1 Demographic Analysis

The survey questionnaire requested participants demographic data to analyse the sample for representativeness against the STTO population. Comparing the demographic features also enables a rudimentary check on the random nature of the sampling method, comparison between groups and analysis of variation between them. The Home Office (2018b) publishes limited police workforce demographic data, which reduced the ability to directly compare against the sample. Wherever possible MPS data will be used and if this is unavailable relevant E&W data will be used a proxy for comparison to the sample.

4.1.1 Gender, Rank and Ethnicity

Through the MPS Information Sharing Agreement the researcher accessed STTO demographic data. Whilst this is fragmented over a number of databases the quality of the data appears complete and is considered of sufficient quality for use as a valid comparator.

Gender: MPS data indicates the STTO population of Male officers is 85% (*n*=4141) and Female offices is 14.9% (*n*=728) (MPS, 2019a). In comparison, the research sample was 96% Male (STTO *n*=66, AFO *n*=236) and 3% Female (STTO *n*=3, AFO *n*=6) officers. It is unclear whether the sample itself or general limited representation of women within this type of specialist role supports both anecdotal information and extant research of this issue (Brown and Sargent, 1995). However, Home Office data indicates that 27% of MPS officers are Female with only 7% the proportion of Female AFOs is significantly lower in comparison to the MPS workforce (Home Office, 2018; MPS, 2019a). The sample appears over-represented by Male and under-represented by Female officers.

Rank: Survey participants indicated that 91% were Constable (*n*=283) rank, 7% were Sergeant (*n*=23) and 2% Inspector rank (*n*=5). MPS STTO population data [10] indicates the following percentage at each rank; 89.1% Constable (*n*=4324), Sergeant 6% (*n*=290) and 1% Inspector (*n*=47) (MPS, 2019a). The sample appears representative of the MPS STTO population for rank.

Ethnicity: The proportion of BME officers within the sample was 9.2% (*n*=29). MPS STTO data indicates the population is comprised of 79.1% White (*n*=3830), 7.2% declared as BME (*n*=351) with 13.7% not stating their self-defined ethnicity (*n*=663) (MPS, 2019a). In comparison, 14.2% of the MPS workforce are defined as BME (Home Office, 2018). The sample appears representative of the MPS STTO population for ethnicity.

[10] Above Inspector rank, additional staff are STTO trained supplementing the total number within the MPS.

4.1.2 Role, Age and length of service in role or police

The MPS is fundamentally an unarmed police service, where 92% of officers patrol, interact with the public and respond to emergency incidents 'unarmed' (Home Office, 2018). STTO qualified staff perform this unarmed patrol function, but have received additional training in the use of TASER. The MPS has 2500 (circa) AFOs, each are armed with conventional firearms and perform a variety of role related functions. Unarmed officers, which may include STTO, will deploy and may be the initial response to a potential suicide by cop incident. Dependant on the subject's capability, intent and considering the threat or risk, where authorised AFOs will be specifically deployed to protect the public, support unarmed colleagues and resolve the incident.

Table 2 illustrates the sample which contained 6.14% of the MPS STTO population (*n*=4889) (Home Office, 2018); comprising of 23% (*n*=74) 'unarmed' STTO and 77% (*n*=241) AFO. The sub-groups represented 3.1% of the overall MPS 'unarmed' STTO workforce (*n*=2369) and 9.6% of the overall MPS AFO workforce (*n*=2520).

MPS STTO trained	Population	Sample	% Pop.
	(*n*)	(*n*)	
'Unarmed' STTO	2,369	74	3.12%
AFO	2,520	241	9.56%
Total STTO population	4889	315	6.44%

Table 2. MPS unarmed STTO, AFO and total STTO trained population.

A mean age comparison between the sample and E&W data (*M*=39.4) was similar for AFOs (*M*=39.6), but 7.1 years younger for STTO (*M*=32.3).

When officer age is also examined and compared with the mean length of service for E&W (*M*=12.38); STTO (*M*=9.3) indicated a significantly lower mean service than for AFO (*M*=14.2). Data is not publicly available the for length of service in role and the survey questionnaire indicated minimal difference between STTO (*M*=5.5) or AFO(*M*=5.3).

4.1.3 Demographic Summary

There were a number of participants who did not complete some of the demographic questions, which may have a small effect on the overall representativeness of the sample. The MPS STTO demographic data appears complete and is considered of sufficient quality for use as a valid comparator to provide an indication of the research sample representativeness. Acknowledging the under-representation of female officers, it is argued this sample appears a valid representation of the MPS STTO population.

Each survey question has been statistically tested for consistency. As officers attended training the 'random cluster' sampling method meant each STTO or AFO had the same probability of being selected to participate in the research. Whilst the proportion of STTO to AFO participants is lower, the nature of the police service means that every officer will have had some career experience in the unarmed role.

The role, age and length of police or role related service appears representative of the published data, with a small variance between the sample and E&W data. This survey questionnaire identifies that AFOs are approximately seven years older with approximately five years more police service than STTO. This may be attributable to recent MPS surges in recruitment for both the police service and specialist roles e.g. STTO or AFO. There is an anecdotal evidence that officers will not apply for a specialist role unless they have gained some 'general policing' experience. This may be due to a perception of the nature of the specialist training or operational role, which can also influence an officer's ability to respond in challenging incidents or critical decision making.

4.2 Survey Questionnaire Analysis

The survey sought to understand a broad range of influencing factors that may contribute to an officer's response and their subsequent use of force. Role related functions, with the satisfaction and motivation to perform them were initially explored. To understand how differing techniques and methods may be applied in resolving conflict; the influence of behavioural reaction to stimulus, tactical application and role related proficiency were also examined. Lastly, the effect of labelling upon threat assessment was utilised to analyse the tactical and response options selected by each sub-group.

4.2.1. Satisfaction

Thirteen of the most frequent 'everyday' tasks that either an STTO or AFO may perform were analysed to understand an officer's satisfaction and therefore motivation to perform specific functions. The responses indicated a high reliability of consistency ($\propto$=0.828). Comparing groups (Table 3) a statistically significant higher level of satisfaction is reported when performing a limited number of role related tasks.

		STTO			AFO			Fishers	Mann-Whitney U test			
		Mean	N	Std. Dev	Mean	N	Std. Dev	$\chi 2$	MW U value	Std test Stat z	Effect size r	*p-value*
Q14_2	Helping Vulnerable People	4.2	74	0.74	4.28	241	0.892	0.0359	9798.5	1.4	0.0789	0.162
Q14_3	Searching Suspects	3.76	74	1.018	3.43	241	1.116	0.2642	7496.5	-2.155	-0.1214	0.031
Q14_4	Detecting Crime	4.26	73	0.866	3.92	241	1.013	0.1098	7118.5	-2.605	-0.1470	0.009
Q14_6	Public Order	3.59	74	1.019	3.22	241	1.136	0.0481	7283	-2.47	-0.1392	0.014
Q14_10	Firearms Crime - illegal use or possession of	3.8	74	0.906	4.14	240	0.938	0.0109	10835	3.035	0.1713	0.002

Table 3. Q14 Task related satisfaction

STTO indicated satisfaction scored higher for three 'crime' orientated tasks gained through 'Searching suspects', 'Detecting crime' and 'Public Order'. Each were statistically significant and in accepting $H_{1,}$ STTO was greater than for AFO, albeit for each the effect was small and negative. Conversely, AFO indicated higher statistically significant satisfaction value for 'Helping vulnerable people' and 'Firearms Crime' and in accepting H_1 was higher for AFO compared to STTO, with a small positive effect.

The correlation coefficient between groups for satisfaction gained from role related tasks showed a high degree of similarity was present. There were numerous strong positive associations for satisfaction indicated between variables e.g. helping vulnerable persons and preventing crime (STTO *r*=.466, AFO *r*=.695, *n*= 315, *p* <

.01); violent crime and firearms crime (STTO *r*=.69, AFO *r*=.772 *n*=315, *p* < .01); arresting suspects and violent crime (STTO *r*=.664, AFO *r*=.635, *n*=314, *p* < .01).

However, there were differences when comparing satisfaction and association within groups. There was strong crime related (detecting, reporting, investigating, firearms, violent), public order and mental health correlations within the AFO group; in contrast to STTO who did not record any correlation within these variables. The statistical analysis is detailed in Appendix G_Q14.

4.2.2. Motivational indicators

Eight motivational indicators were examined with Q15_9 removed to improve the reliability of consistency (∝=0.815).

		STTO			AFO			Fishers	Mann-Whitney U test			
		Mean	N	Std. Dev	Mean	N	Std. Dev	$\chi 2$	MW U value	Std test Stat z	Effect size r	*p-value*
Q15_2	Recognition - peers / managers	3.47	74	0.968	3.12	241	1.065	0.1011	7329.5	-2.418	-0.2811	0.016
Q15_3	Learning/ career development	3.92	74	0.84	3.64	241	0.93	0.2170	7397.5	-2.353	-0.2735	0.019
Q15_4	Appreciation- public or victims	4.12	74	0.827	3.77	241	1.054	0.0731	7327	-2.431	-0.2826	0.015
Q15_5	Excitement or Enjoyment	4.41	74	0.72	3.89	240	0.968	0.0014	6166.5	-4.211	-0.4895	0.000
Q15_7	Personal pride	4.61	74	0.569	4.38	241	0.782	0.3313	7632	-2.116	-0.2460	0.034

Table 4. Q15 Motivational Indicators

Comparing median ranks (Table 4) motivational indicators through 'Recognition', 'Learning/ career development', 'Appreciation' and 'Excitement or Enjoyment, were each statistically significant and in accepting H_1 were higher for STTO than for AFO with a small negative effect.

There were numerous medium and strong positive motivational intercorrelations indicated between variables, specifically: *personal challenge* and *learning/ career* development (STTO *r*= .334, AFO *r*= .489, *n*= 315, *p* < .01); *personal challenge* and *excitement or enjoyment* (STTO *r*= .495, AFO *r*= .573, *n*= 315, *p* < .01); *personal challenge* and *personal pride* (STTO *r*= .592, AFO *r*= .797, *n*= 315, *p* < .01). However, whilst the correlation coefficient between groups for motivation indicators showed a high degree of similarity was present, the effect was stronger for AFO than STTO. Comparing the correlation within groups, between *recognition from managers* with *appreciation*, *public expectation*, *personal pride* or *challenge* there was a greater association or influence for AFO than STTO, who in contrast did not record any motivational correlation between these variables (Appendix G_Q15).

4.2.3 Behavioural reaction to stimulus

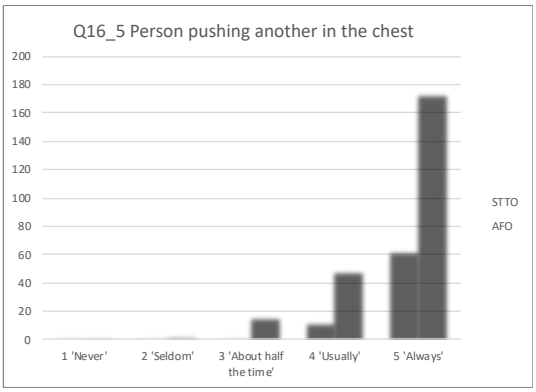
To appreciate the reaction to stimulus or conflict situation, Q16 sought to understand whether this met any established behavioural typology for police officers. It indicated a high reliability of consistency across sub-questions (∝=.836).

		STTO			AFO			Fishers	Mann-Whitney U test			
		Mean	N	Std. Dev	Mean	N	Std. Dev	$\chi 2$	MW U value	Std test Stat z	Effect size r	*p-value*
Q16_5	Person pushing another person in the chest	4.84	74	0.371	4.63	240	0.685	0.0730	7727	-2.229	-0.1258	0.026
Q16_6	Known person with mental health issues pushing another individual in the chest	4.88	74	0.329	4.64	240	0.7	0.0311	7641	-2.513	-0.1418	0.012
Q16_11	Person armed with a weapon (firearm) shouting and aggressive towards another	4.2	74	1.375	4.89	239	0.445	0.0000	10973	5.521	0.3121	0.000
Q16_12	Known person with mental health issues armed with a weapon (firearm) shouting and aggressive towards another	4.18	74	1.378	4.89	238	0.461	0.0000	11096	6.019	0.3408	0.000

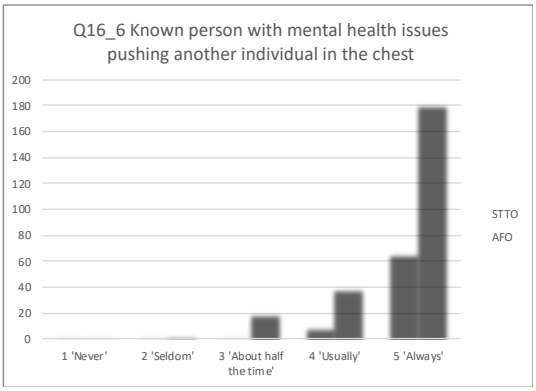
Table 5. Q16 Reaction to stimulus

Comparing the observed values for each significant result (Table 5), an identifiable pattern emerges. Under the null hypothesis of no difference between the two sub-groups; the STTO willingness to 'Always' engage was, overall, statistically significantly higher than AFO.

For Q16_5 *Person pushing another in the chest* was statistically significant and therefore H_1 accepted*,* indicating stimulus gained was higher for STTO (*M*= 4.8) than AFO (*M*=4.6) with a small negative effect.

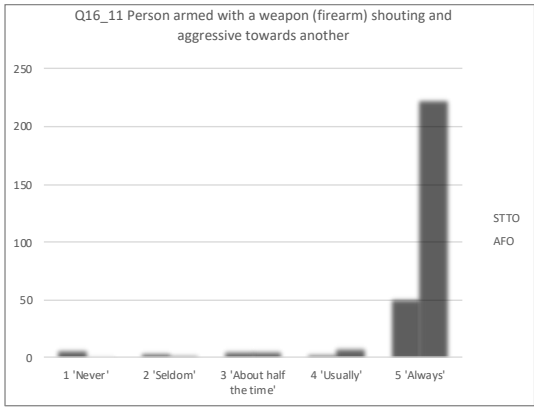


Q16_6 Known person with mental health issues pushing another individual in the chest was statistically significant and therefore H_1 accepted*,* indicating stimulus gained was higher for STTO (*M*= 4.9) than for AFO (*M*=4.6) with a small negative effect.

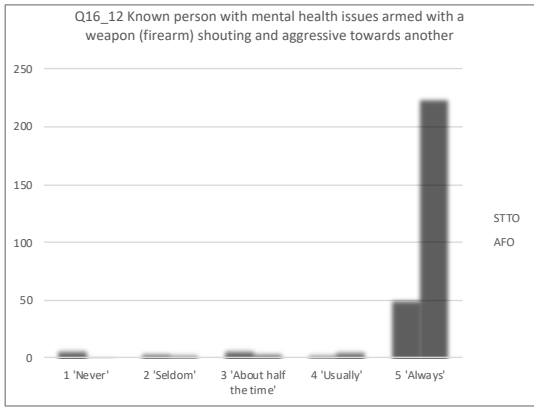


However, where the conflict stimulus within the question escalated in threat, the observed responses for both groups have an extreme positive skew, indicating that both groups would 'Usually' or 'Always' engage with the subject. In the last two questions, the subject's capability (firearm) and intent (harm) became clearer.

Q16_11 Person armed with a weapon (firearm) shouting and *aggressive towards another* was statistically significant and therefore H_1 accepted, indicating stimulus gained was higher for AFO (*M*=4.9) than for STTO (*M*= 4.2) with a medium positive effect.



Q16_12 Known person with mental health issues armed with a weapon (firearm) shouting and aggressive towards another was statistically significant and therefore H_1 accepted, indicated stimulus gained was higher for AFO (*M*=4.9) than for STTO (*M*= 4.2), with a medium positive effect.



Under the null hypothesis of no difference between the two sub-groups; the observed responses may reflect the differing operational and role related capability between the groups, to either protect themselves or ability to intervene to protect others. When presented with an armed threat, STTO observed values were unsurprising lower than expected when compared with AFO responses. In contrast, indicated by a higher observed value, AFOs had a 'conflict impetus' or positive reaction to the escalating threat.

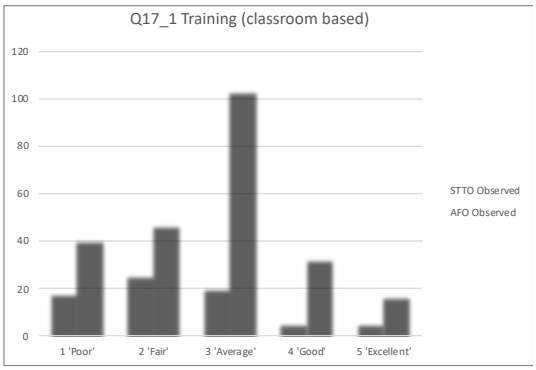
4.2.4 Developing proficiency to resolve conflict

Where officers spontaneously respond to a developing incident, there are heuristic or behavioural influences which may have affected decision making or have subsequently contributed to an officer's proficiency in resolving conflict. The survey sought to understand how officers initially learned to resolve conflict when dealing with members of the public. To increase the Cronbach's Alpha reliability score to an acceptable level (∝=.795) and as shown in Table 6, only Q17_1 and Q17_2 were included in the analysis.

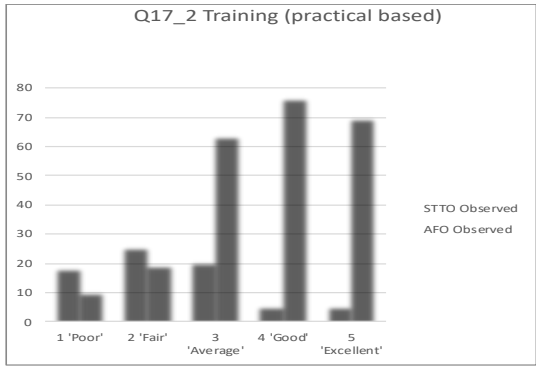
		STTO			AFO			Fishers	Mann-Whitney U test			
		Mean	N	Std. Dev	Mean	N	Std. Dev	$\chi 2$	MW U value	Std test Stat z	Effect size r	*p-value*
Q17_1	Training (classroom based)	2.37	73	1.137	2.74	237	1.1	0.1404	10446	2.8	0.1590	0.005
Q17_2	Training (practical based)	3.26	73	1.179	3.74	237	1.093	0.5610	10633	3.071	0.1744	0.002

Table 6. Q17 Developing proficiency

Q17_1 Training (classroom based) indicated the effectiveness of classroom-based training was statistically significant and in accepting H_1 was higher for AFO (*M*=2.7) than for STTO (*M*= 2.4), with a small positive effect.



Q17_2 Training (practical based) indicated the effectiveness of practical based training was statistically significant and in accepting H_1 was higher for AFO (*M*=3.6) than for STTO (*M*= 3.3), with a small positive effect.



The correlation coefficient between groups for Q17_1 and Q17_2 showed a high degree of similarity was present (STTO *r*= .694, AFO *r*= .637 *n*= 310, $p < .01$).

The contribution of learning environments to decision making or influencing an officer's proficiency in resolving conflict were examined in Q18 (Table 7). It indicated a high reliability of consistency across all sub-questions (∝=.795).

		STTO			AFO			Fishers	Mann-Whitney U test			
		Mean	N	Std. Dev	Mean	N	Std. Dev	$\chi 2$	MW U value	Std test Stat z	Effect size r	*p-value*
Q18_1	Training (classroom based)	2.27	74	1.162	2.8	240	1.124	0.0032	11270	3.644	0.2056	0.000
Q18_2	Training (practical based)	3.12	74	1.182	3.74	240	1.109	0.0012	11503.5	3.983	0.2248	0.000

Table 7. Q18 Contribution of learning environments

Both *Training (classroom based)* and *Training (practical based) were* statistically significant and in accepting H_1 indicated the contribution of practical based training was higher for AFO than for STTO, with a small positive effect

There were numerous positive intercorrelations indicated between variables and sub-groups, implying how differing types of learning contribute to an ability in resolving conflict (Appendix G_Q18). The correlation coefficient between groups showed a high degree of similarity was present for and practical training (STTO *r*=.702, AFO *r*=.639, *n*=314, $p < .01$); observing colleagues and practical training (STTO *r*=.347, AFO *r*=.361, *n*=314, $p < .01$); observing and working with colleagues (STTO *r*=.851, AFO *r*=.833, *n*=313, $p < .01$) or via their own life experience and personal abilities (STTO *r*=.837, AFO *r*=.721, *n*=305, $p < .01$).

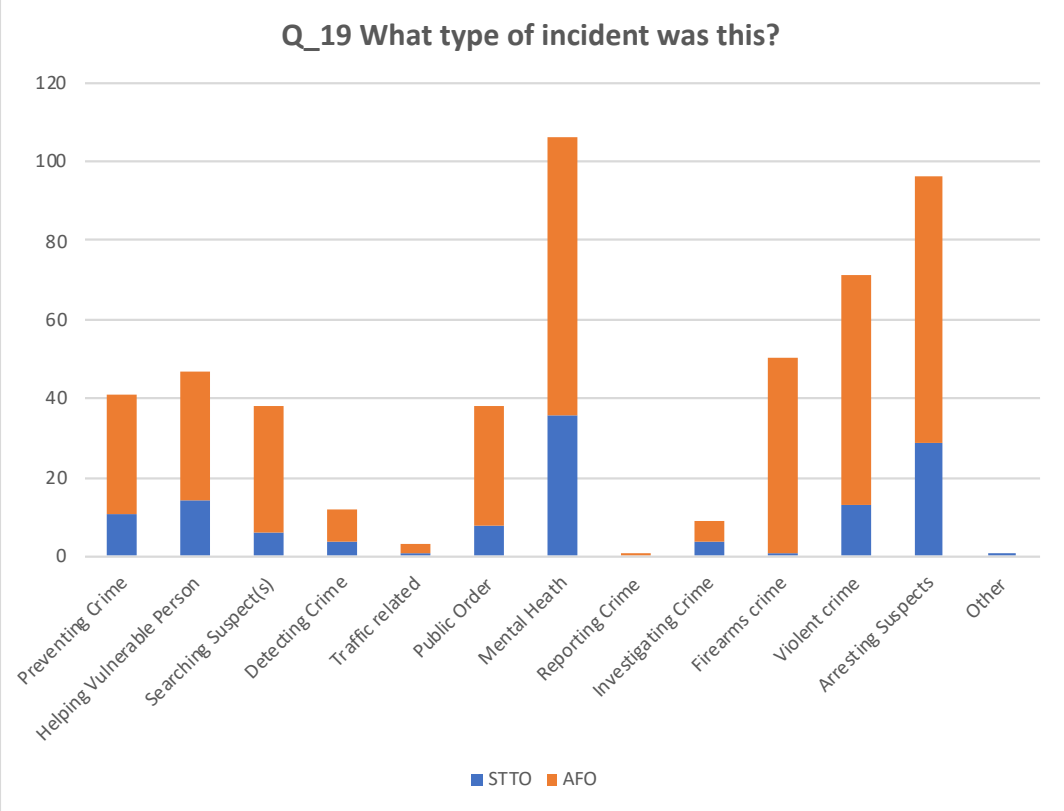
Between groups there were differences when comparing the contribution of either training environment or experiential factors. AFO showed a strong correlation between the contribution of *classroom-based training* with a *practical based training* (*r*= .639, *n*=240, $p < .01$) and *experiential learning* through *observing* (*r*= .229, *n*=240, $p < .01$) or *working with colleagues* (*r*= .129, *n*=240, $p < .01$). In contrast, for the same variables, STTO only showed a correlation between *practical based training* and experience through observing colleagues (*r*= .347, *n*=74, $p < .01$).

In summary, the effectiveness of classroom and practical based training in influencing an officer's development and behaviour to resolve conflict appears higher for AFO than for STTO. This 'experiential learning' is reinforced whether through practical scenarios, observation or working with colleagues. In comparison, there was only a small association for STTO in practical training and experience through observing colleagues.

4.2.5 Tactical Responses and Effectiveness

Contrasting AFO and STTO responses, a series of questions (Q19 to Q21) sought to compare the tactical commonality between groups, identify positive or negative implications of certain strategies or approaches and identify any limitations. Broadly categorised, participants were requested to consider effective and ineffective tactical responses.

Effective Tactics- Thirteen of the most common types of the incident were available for participants (*n*=315) to consider. There were 512 entries, with some participants submitting more than one incident descriptor per question. Chart 1 visually indicates the responses.



Note: *n*=315

Chart 1. Q19 What type of incident was this?

AFOs proportionally nominated 'Firearms' incidents more than STTOs; with the volume of incidents selected by both groups being 'Mental Health' (STTO *n*= 36, AFO *n*=70), Arresting suspects (STTO *n*= 29, AFO *n*=67) and 'Violent Crime' (STTO *n*= 13, AFO *n*=58).

A 2x2 contingency table enabled analysis of the statistically significant responses for Q19_7 and Q19_10 shown below:

Q19_7 Mental Health	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
Mental Heath	36	24.902	70	81.098	106
Not applicable	38	49.098	171	159.902	209
Total	74		241		315

Mental Health ($\chi 2$*=9.744, p<.01, df=1, n=315*) was statistically significant, with a higher observed expected value for STTO and lower for AFO.

Q19_10 Firearms crime	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
Firearms crime	1	11.746	49	38.254	50
Not applicable	73	62.254	192	202.746	265
Total	74		241		315

Firearms crime ($\chi 2$*=13.886, p<.001, df=1, n=315)* was statistically significant, with a higher observed value than expected for AFO and conversely lower for STTO.

Linked to an associated sub-question (Q19_a), this requested officers to rate the effectiveness of specific tactics to resolve the incident. Nine tactics were available for officers to select, escalating in a use of force, with a 'not applicable' option included. Q19_a_10 'Other' was removed from further analysis to improve the reliability of consistency across all sub-questions ($\propto$=.78).

Chart 2 summarises the effectiveness of tactics for STTO and AFO. Dependant on the type of incident, threat or risk, officers may have indicated 'not applicable', altering their tactical approach or escalating use of force.

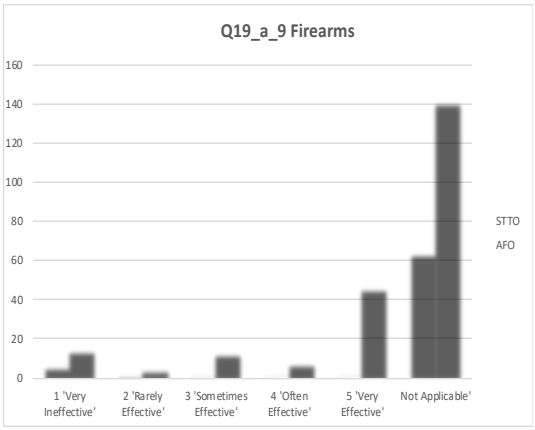
	STTO Comms	AFO Comms	STTO Time or space	AFO Time or space	STTO OST skills	AFO OST skills	STTO Restraint	AFO Restraint	STTO ASP	AFO ASP	STTO CS Spray	AFO CS Spray	STTO TASER	AFO TASER	STTO Baton Gun	AFO Baton Gun	STTO Firearms	AFO Firearms
5 'Very Effective'	25	101	15	67	6	35	25	82	1	10	1	6	26	59	0	3	0	45
4 'Often Effective'	12	64	18	71	10	42	17	62	4	14	2	8	10	26	0	4	0	7
3 'Sometimes Effective'	6	20	12	27	10	35	5	27	3	27	2	18	5	11	0	7	0	12
2 'Rarely Effective'	14	19	9	28	15	28	8	10	6	27	8	25	1	6	2	5	1	4
1 'Very Ineffective'	13	14	13	17	9	22	4	9	14	30	14	42	1	11	5	19	5	13
Not applicable	1	6	5	14	19	61	12	33	41	115	40	122	27	108	62	185	63	140

Chart 2. Q19_a. How effective were the following tactics?

		Fishers $\chi 2$	Mann-Whitney U test			
			MW U value	Std test Stat z	Effect size r	*p-value*
Q19_a_1	Communication to de-escalate	0.0027	9797.5	3.102	0.181	0.002
Q19_a_2	Time or space to de-escalate	0.1096	9369.0	2.124	0.123	0.034
Q19_a_9	Firearms	0.0000	5688.5	-3.940	-0.231	0.000

Table 8. Tactical effectiveness

The reported effectiveness of 'communication' and 'time or space to de-escalate' (Table 8) was statistically significant, and in accepting H_1 was higher for AFO than for STTO, each producing a small positive effect.



However, whilst the effectiveness of firearms was statistically significant; and in accepting H_1, was higher for STTO than for AFO with a small negative effect, a prominent outlier for both was the 'not applicable' option. The observed frequencies from both groups related to the incident envisaged by the participant in Q19 are lower than expected under the null hypothesis. There was a small divergence between responses; with AFO indicating the effectiveness of Firearms was 'Very Effective' whereas STTO responses had a negative skew signifying 'Very Ineffective' or 'Rarely Effective'.

The correlation coefficient between groups showed a high degree of similarity was present between Firearms with Baton Gun (STTO r=.930, AFO r=.556, n=289, p < .01). However, AFO observed responses were skewed at one end of the scale, indicating the association of effectiveness of Firearms with Baton Gun as a tactic was generally negative or 'not applicable'. This would require further examination, but as STTO are not trained to use Firearm or Baton Gun their responses may be attributable to a perception of effectiveness rather than an informed opinion.

There were numerous positive intercorrelations indicated between variables and both groups, implying the effectiveness of differing tactics (Appendix G_Q19_a).

The correlation coefficient between groups showed a high degree of similarity was present between communication with de-escalation (STTO r=.608, AFO r=.626, n=295, p < .01); OST and restraint (STTO r=.451, AFO r=.553, n=292, p < .01); and firearms with, ASP (STTO r=.369, AFO r=.346, n=295, p < .01), CS Spray (STTO r=.422, AFO r=.413, n=295, p < .01); and TASER (STTO r=.368, AFO r=.557, n=295, p < .01).

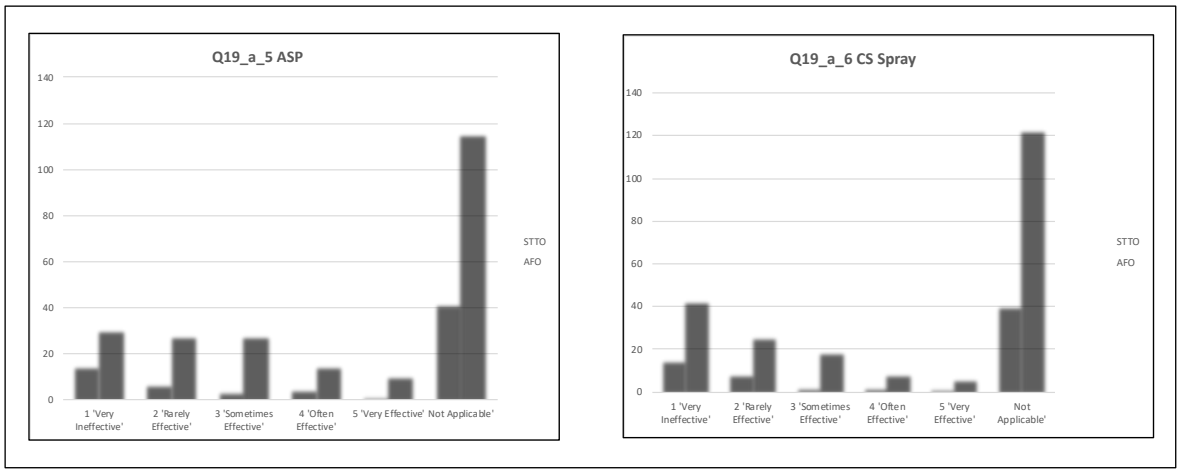


Chart 3: Observed frequencies for Q19_5 ASP and Q19_6 CS Spray.

The intercorrelation between 'ASP' *(χ^2=.223, df=4, n=292)* and 'CS Spray' *(χ^2=.807, df=4, n=288)* was significant (*r*=.824, *n*=288, *p* < .01). However, as shown in Chart 5 when analysing responses further, 'not applicable' was a prominent outlier for both AFO and STTO each with low observed frequencies and a negative skew (Chart 3). There was a significant association between STTO and AFO responses, implying that ASP (r_s=.714, *p* <.05, AFO *n*= 383, STTO *n*= 120) or CS Spray (r_s =.886, *p* <.05, AFO *n*= 378, STTO *n*= 117) were not an effective or appropriate tactical response to the incident selected in Q19.

When comparing the correlation of tactical effectiveness between groups there were statistically significant differences. AFO showed a statistically significant intercorrelation between *TASER* and *OST techniques* (*r*=.239, *n*=221, *p* < .01), *restraint* (*r*=.191, *n*=221, *p* < .01) and *CS Spray* (*r*=.503, *n*=221, *p* < .01). In contrast, for the same variables STTO only showed a intercorrelation between *TASER* and *CS Spray* (*r*= .289, *n*=74, *p* < .05). However, the correlation coefficient between groups in the effectiveness of TASER showed a high degree of similarity was present (r_s =.986, *p* <.05, STTO *n*= 124, AFO *n*= 381).

Ineffective Tactics- To understand the complete use of force response, participants were requested to rate ineffective tactics they had witnessed or used and the type of incident. Chart 4 illustrates the responses to Q20.

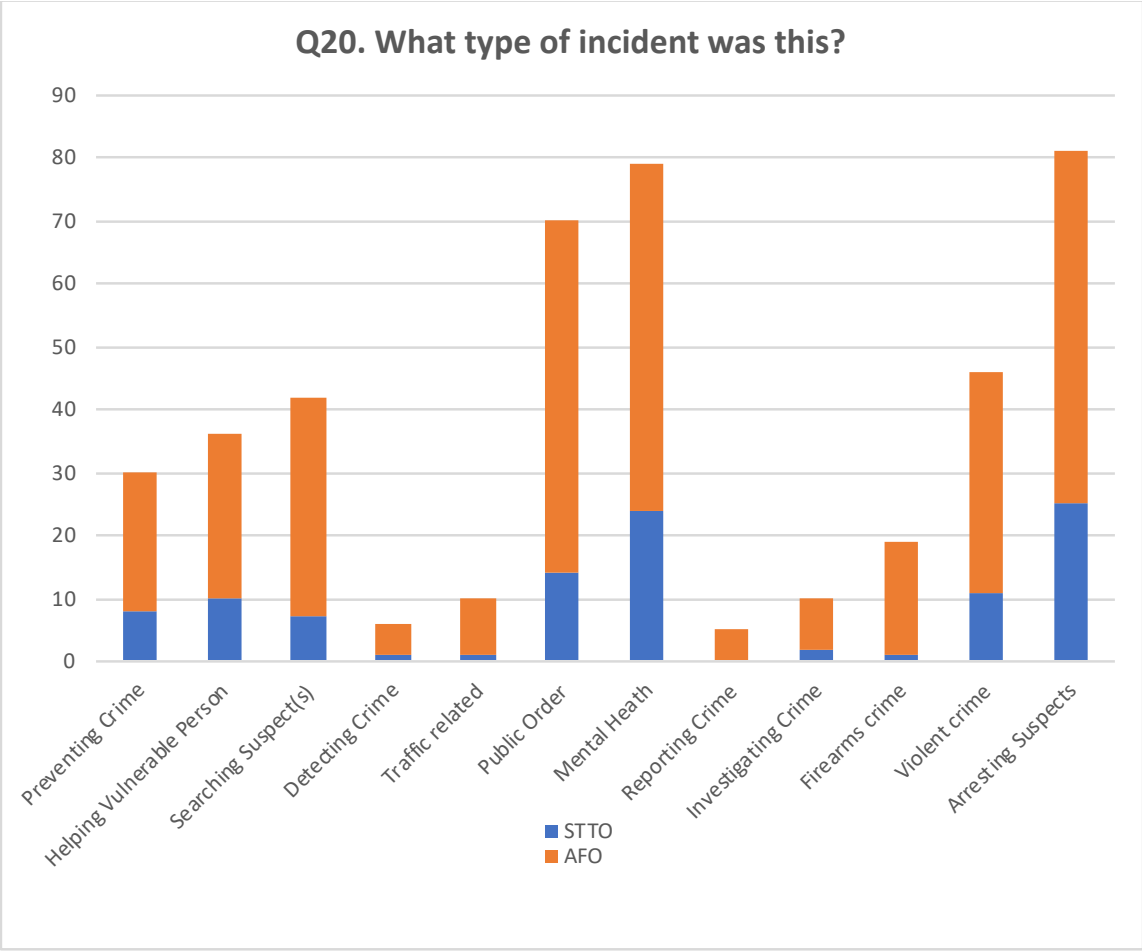


Chart 4. Q20 What type of incident was this?

Twelve of the most common types of incidents were offered for selection and, with 434 entries, some participants (*n*=315) submitted more than one incident descriptor.

Violent Crime (χ^2=.005, $p < .01$, *df*=11, STTO *n*= 25, AFO *n*=56) was the only statistically significant result accounting for 11% of the responses.

The results and order in which ineffective tactics were applied (STTO *n*=232, AFO *n* =739) are visually represented in Chart 5, with Q20_a produced a high degree of reliability (∝=.903). Analysis indicated no results were considered statistically significant.

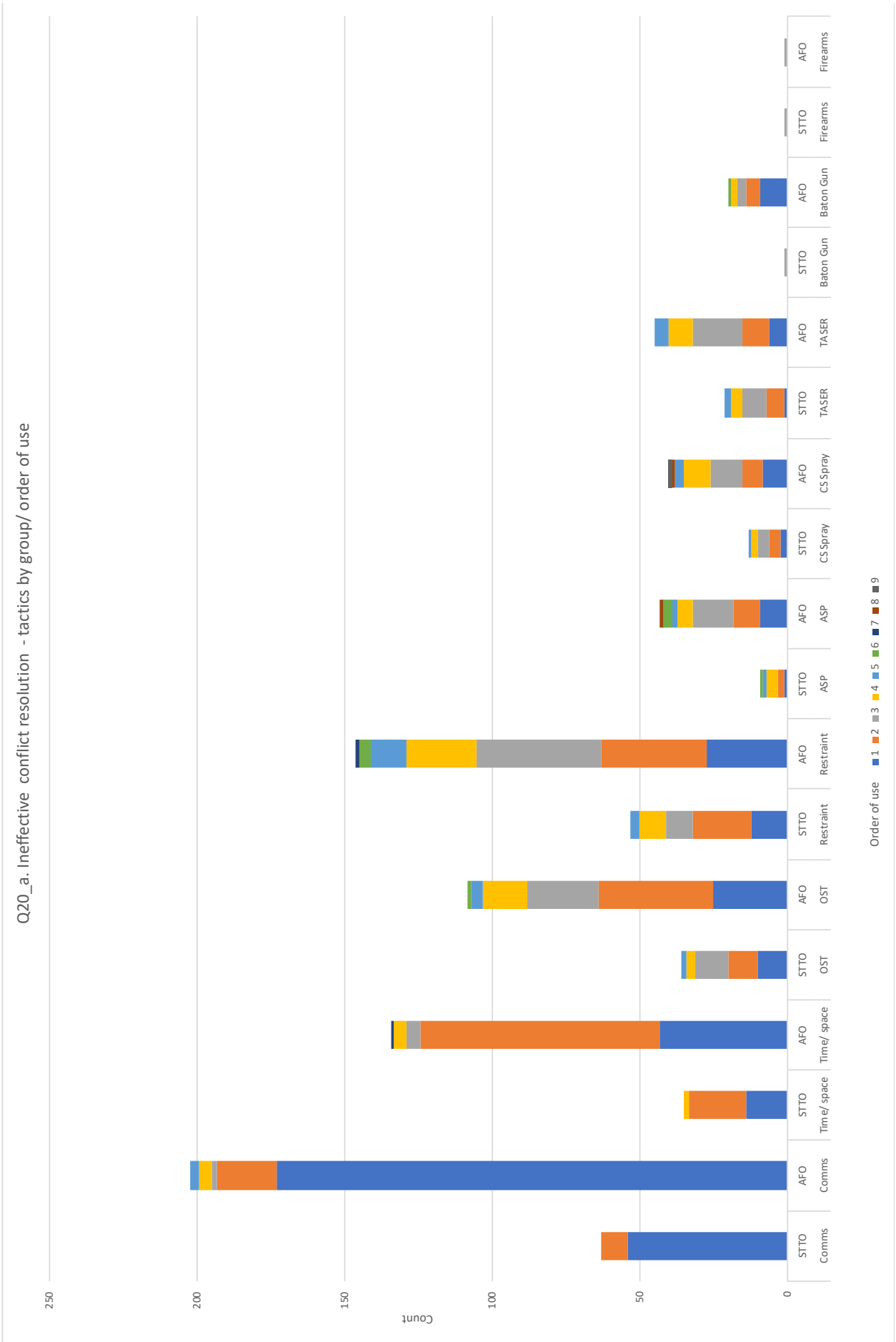


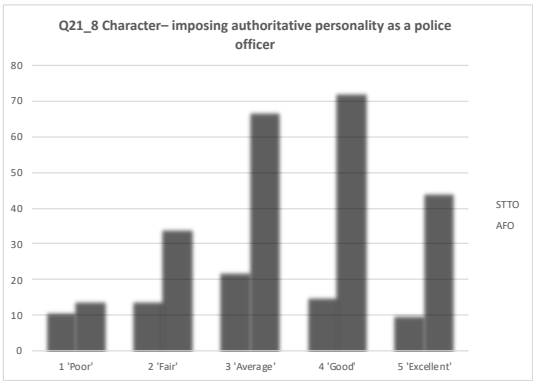
Chart 5. Q20_a. Ineffective conflict resolution tactics by group and order of use.

In summary, contrasting AFO and STTO tactical responses to a series of scenarios (Q19 to Q21) sought to compare commonality between groups, identify positive or negative implications of certain strategies or approaches and identify any limitations. AFOs proportionally nominated ‘Firearms’ incidents more than STTOs, and the volume of incidents related to ‘Mental Health’, ‘Arresting suspects’ and ‘Violent Crime’. The tactical approaches for both sub-groups were similar with ‘Communication’ and ‘Time or space to de-escalate’ identified as being more effective for AFO than STTO. The correlation coefficient between groups showed a high degree of similarity was present across the range of tactics (*n*=9). Both groups indicated an aversion to using Baton or CS Spray. Discussed later this may be attributable to the increased reliance on TASER and the proficiency in using Baton or CS Spray with tactical limitations in engaging a subject at close range.

4.2.6 Approaches to resolving conflict

Participants were requested to consider personal techniques or approaches they employed or believed were effective in resolving a confrontational situation. There were eight approaches to choose from, with Q21_7 removed from further analysis to increase the overall Chronbach Alpha score (∝=.705).

The use of *'Character- imposing authoritative personality as a police office'* (χ^2=.062, *df*=4, *n*=303). M-WU test (*p*=.008*, U*= 9793, *z*=32.632*, r*= .151) was statistically significant result and in accepting H_1 effectiveness was higher for AFO (*M*= 3.3) than for STTO (*M*= 3) with a small positive effect.



Both groups expressed strong correlation between *time to de-escalate* with *rapport* (STTO *r*=.506, AFO *r*=.62, *n*=303, *p* < .01), *communication* (STTO *r*=.302, AFO *r*=.472, *n*=300, *p* < .01) and *temperament* (STTO *r*=.242, *p* < .05; AFO, *r*=.626, *p* < .01, *n*=303). Further correlations between *knowledge* with *temperament* (STTO *r*=.340, AFO *r*=.449, *n*=306, *p* < .01) and *experience* (STTO *r*=.344, AFO *r*=.507, *n*=308, *p* < .01) were identified. There were differences when comparing the association of tactical effectiveness between groups. AFO showed a statistically significant correlation between *experience* with *time to de-escalate* (*r*=.195, *n*=233, *p* < .01), *communication* (*r*=.344, *n*=231, *p* < .01) and *temperament* (*r*=.443, *n*=234, *p* < .01); and also, between *communication* and *knowledge* (*r*=.255, *n*=234, *p* < .01). In contrast, STTO did not record any correlation between the same variables.

4.2.7 The effect of labelling

The literature review identified the subject's role within a conflict situation and the influence a label or the language used to denote a subject may affect the officer's response; especially if there is a change in status from witness to suspect, or conversely if reversed. This sought to understand the order in which a tactical option would be employed and whether the label affected the response. It asked two broad questions; what option would be immediately considered or not used.

To analyse the conflict response, a series of questions (Q22 to Q25) examined whether this differs between sample groups when the subject is labelled as a witness, victim or an offender. The Spearman Rank correlation coefficient (r_s) was used to determine the strength and direction of the relationship for the chosen tactical option between AFO and STTO groups. A coefficient reports a value from +1 to -1, where zero is no correlation and close to 1 indicates the 'rankings' between the two groups are very similar i.e. no difference between groups, therefore retaining the null hypothesis (H_o).

Tactics utilised - From a defined range of tactics or options, Q22 and Q23 requested participants to indicate the use and order of application e.g. 1= first used, 2= second or 3= third etc., with not used/applicable being collated. This sought to understand the order in which a tactical option would be applied against the labelled individual. Any 'not applicable' responses were excluded from the analysis of Q22 and Q23 but included within the responses for Q24 and Q25 respectively.

Q22. Correlation STTO * AFO		Spearman Rank Correlation r_s	R^2	(*n*) STTO	(*n*) AFO
Q22_1	For a Suicidal or Self Harm suspect	0.828	0.686	391	1230
Q22_a	A Suspect presenting threat of violence towards another	0.876	0.767	387	1247
Q22_b	For an Emotionally or Mentally Disturbed suspect	0.846	0.716	354	1171
Q22_c	A Suicidal or Self Harm suspect armed with a weapon (not firearm)	0.816	0.666	382	1252
Q22_d	For a Suspect presenting threat of violence towards another armed with a weapon (not firearm)	0.812	0.659	352	1247
Q22_e	An Emotionally or Mentally Disturbed suspect armed with a weapon (not firearm)	0.815	0.665	364	1240
Q22_f	For an Emotionally or Mentally Disturbed suspect armed with a weapon (firearm) presenting threat of violence towards another	0.756	0.571	337	1221
Q22_g	For a Suicidal or Self Harm suspect armed with a weapon (firearm) presenting threat of violence towards another	0.739	0.546	338	1222

Note. All Spearman Rank Correlation coefficients are significant at $p < .001$ (2 tailed), AFO n= 245, STTO n =70, df =99.

Table 9. Q22 UoF options labelled as 'Suspect'

Q23. Spearmans Rank correlation STTO * AFO		Spearman Rank Correlation r_s	R^2	Responses STTO	Responses AFO
Q23_1	For a Suicidal or Self Harm Victim	0.853	0.668	318	1093
Q23_a	A Victim presenting threat of violence towards another	0.879	0.728	314	1135
Q23_b	For an Emotionally or Mentally Disturbed Victim	0.870	0.698	299	1065
Q23_c	A Suicidal or Self Harm Victim armed with a weapon (not firearm)	0.804	0.579	321	1175
Q23_d	For a Victim presenting threat of violence towards another armed with a weapon (not firearm)	0.797	0.567	315	1183
Q23_e	An Emotionally or Mentally Disturbed Victim armed with a weapon (not firearm)	0.834	0.638	322	1197
Q23_f	For an Emotionally or Mentally Disturbed Victim armed with a weapon (firearm) presenting threat of violence towards another	0.800	0.638	317	1150
Q23_g	Suicidal or Self Harm Victim armed with a weapon (firearm) presenting threat of violence towards another	0.815	0.607	316	1154

Note. All Spearman Rank Correlation coefficients are significant at $p < .001$ (2 tailed), AFO n= 245, STTO n =70, df =99.

Table 10. Q23 UoF options labelled as 'Victim'

The result for each of the sub-questions within Q22 and Q23 where the individual was labelled as a 'Suspect' (Table 9) or as a 'Victim' (Table 10) were statistically significant, with a large positive effect; therefore accepting H_o the responses of STTO and AFO are highly linearly correlated suggesting a high degree of similarity.

Tactics not utilised– Similar to the two previous sub-questions, Q24 and Q25 sought to understand tactics or options which would not be utilised or considered, and therefore discounted by the officer. Any 'not applicable' responses excluded from Q22 and Q23 were included within the analysis for Q24 and Q25 respectively.

STTO * AFO		Spearman Rank Correlation r_s	R^2	Responses STTO	Responses SFO
Q24_1	For a Suicidal or Self Harm suspect	0.983	0.967	207	600
Q24_1_a	A Suspect presenting threat of violence towards another	0.966	0.934	173	486
Q24_1_b	For an Emotionally or Mentally Disturbed suspect	1.000	0.749	196	554
Q24_1_c	A Suicidal or Self Harm suspect armed with a weapon (not firearm)	0.928	1.000	150	393
Q24_1_d	For a Suspect presenting threat of violence towards another armed with a weapon (not firearm)	0.814	0.667	130	395
Q24_1_e	An Emotionally or Mentally Disturbed suspect armed with a weapon (not firearm)	0.886	0.787	142	364
Q24_1_f	For an Emotionally or Mentally Disturbed suspect armed with a weapon (firearm) presenting threat of violence towards another	0.852	0.729	180	485
Q24_1_g	For a Suicidal or Self Harm suspect armed with a weapon (firearm) presenting threat of violence towards another	0.852	0.729	188	474

Note. All Spearman Rank Correlation coefficients are significant at $p < .05$ level (2 tailed) (N=315, AFO n=215, STTO n=70, df=9).

Table 11. Q24 UoF options not used against individual labelled as 'Suspect'

STTO * AFO		Spearman Rank Correlation r_s	R^2	Responses STTO	Responses AFO
Q25_1	For a Suicidal or Self Harm Victim	0.996	0.992	173	508
Q25_a	A Victim presenting threat of violence towards another	0.924	0.854	142	416
Q25_b	For an Emotionally or Mentally Disturbed Victim	0.983	0.967	168	495
Q25_c	A Suicidal or Self Harm Victim armed with a weapon (not firearm)	0.967	0.934	120	343
Q25_d	For a Victim presenting threat of violence towards another armed with a weapon (not firearm)	0.895	0.802	121	348
Q25_e	An Emotionally or Mentally Disturbed Victim armed with a weapon (not firearm)	0.924	0.854	122	320
Q25_f	For an Emotionally or Mentally Disturbed Victim armed with a weapon (firearm) presenting threat of violence towards another	0.867	0.751	144	406
Q25_g	Suicidal or Self Harm Victim armed with a weapon (firearm) presenting threat of violence towards another	0.946	0.894	151	402

Note. All Spearman Rank Correlation coefficients are significant at $p < .05$ level (2 tailed) (N=315, AFO n=215, Unarmed n=70, df=7).

Table 12. Q25 UoF options not used against individual labelled as 'Victim'

The result for each of the sub-questions within Q24 and Q25 where the individual was labelled as a 'Suspect' (Table 11) or as a 'Victim' (Table 12) were statistically significant, with a large positive effect; therefore accepting H_o the responses of STTO

and AFO are highly linearly correlated suggesting a high degree of similarity.

In summary, the correlation coefficient between groups showed a high degree of similarity was present across this set of four sub-questions. Discussed later, there appears minimal difference between the STTO and AFO response to the range of scenarios presented to them, whether the subject was labelled as a witness, victim or an offender.

4.2.8 Training and Equipment

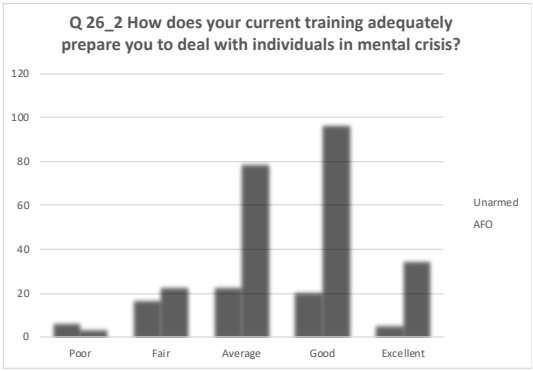
An officer's training or equipment may impact upon or influence their overall capability to respond and any subsequent use or restraint of force. Comprising of four sub-questions, Q26 enabled associations to be considered which may have an influence on decision making or ability in resolving conflict e.g. training or equipment. Using the Likert scale to measure each response, the sub-question additionally permitted a free text response to qualitatively analyse answers.

	STTO			AFO			Fishers	Mann-Whitney U test			
	Mean	N	Std. Dev	Mean	N	Std. Dev	$\chi 2$	MW U value	Std test Stat z	Effect size r	*p-value*
Q26_2	3.03	74	1.11	3.57	238	0.915	0.0005	6374.5	-3.768	-0.2133	0.000

Note: Chronbach Alpha $\propto$ =.758

Table 13. Training and Equipment

The only statistically significant response was for *Q26_2 - How does your current training adequately prepare you to deal with individual's in mental crisis?* (Table 13), which indicated the mean rank was higher for AFO (*M*= 3.6) than for STTO (*M*= 3.0).



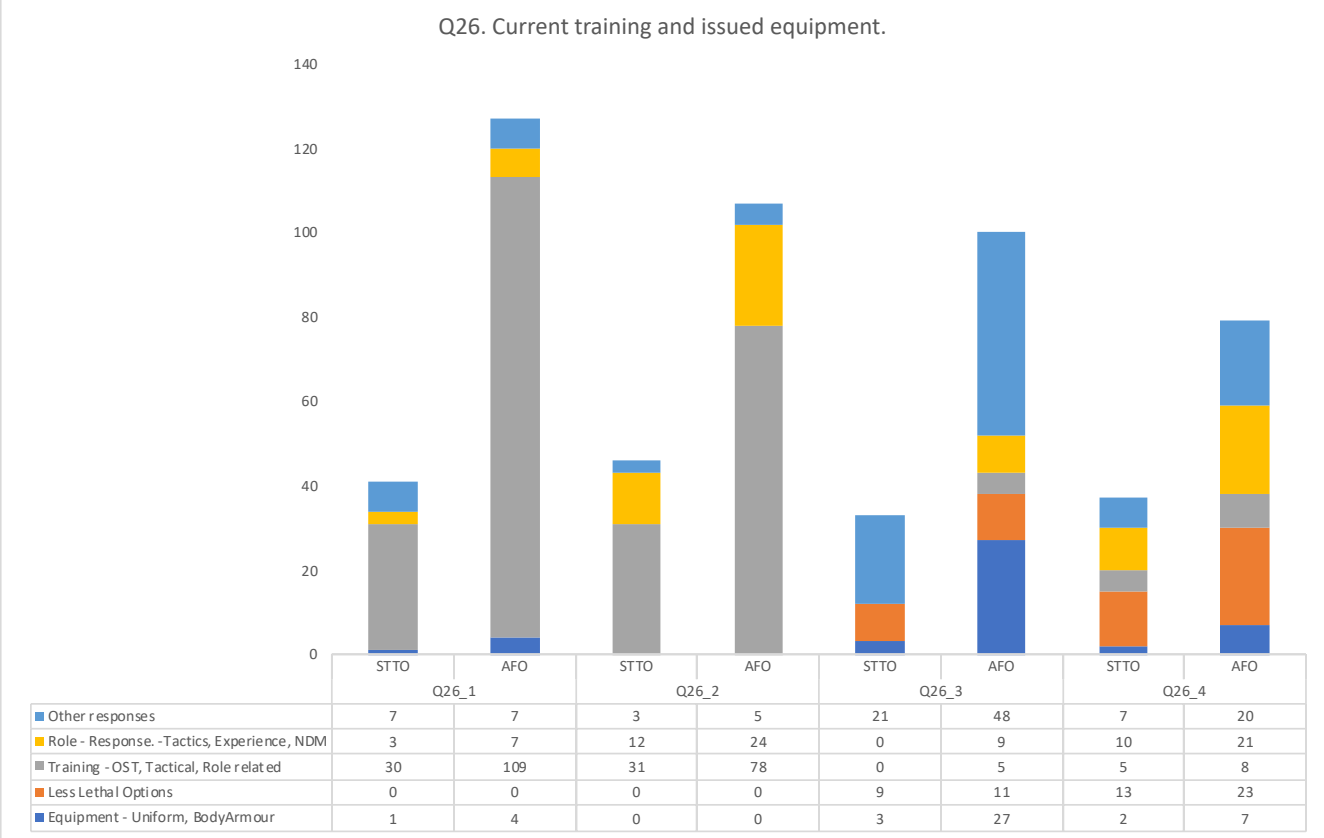
Qualitative responses - A total of 570 free text replies were recorded, as described in section 3.6.8, each response was manually examined and coded for analysis. A code and initial classification was assigned to each line (Table 14). On completion of the open coding process, each were grouped into larger 'selective' codes to thematically categorise the data. Each qualitative response, with open coding, is contained Appendix G.

Q26 Open coding	
Code	Initial Classification
1	Equipment related
2	Training- **+ve** (regular /constant/ realistic training)
3	Trainiung-**ve** (too little/ infrequent/not realistic)
4	Firearms related (training, storage, tactics)
5	Neutral response
6	Police role as 1st responder v NHS
7	Tactics- **-ve**
8	Tactics- **+ve**
9	Use Experience/ NDM
10	BodyArmour **-ve**
11	Less Lethal **-ve**
12	Less Lethal - **+ve**
13	Uniform **+ve**
14	Uniform **-ve**
15	OST- **ve**
16	Other
17	Blank

Q26 Selective coding	
Open Code	Theme
2,3,7,8,15	Training - OST, Tactical, Role related
11,12	Less Lethal Options
4,6,9	Role - Response. -Tactics, Experience, NDM
1,10,13,14	Equipment - Uniform, BodyArmour
5,16	Other responses
17	Not Entered

Table 14. Q26 Open and selective coding

Across the sample and in-between sub-groups, broad themes emerged which are displayed in Chart 6.



	Q26_1 STTO	Q26_1 AFO	Q26_2 STTO	Q26_2 AFO	Q26_3 STTO	Q26_3 AFO	Q26_4 STTO	Q26_4 AFO
Other responses	7	7	3	5	21	48	7	20
Role - Response. -Tactics, Experience, NDM	3	7	12	24	0	9	10	21
Training - OST, Tactical, Role related	30	109	31	78	0	5	5	8
Less Lethal Options	0	0	0	0	9	11	13	23
Equipment - Uniform, BodyArmour	1	4	0	0	3	27	2	7

Chart 6. Q26. Current training and issued equipment.

Role related training (Q26_1) - the ability of training to prepare officers to fulfil the requirements their role accounted for 83% of the responses (N=130); with each subgroup proportionately indicating both positive (STTO n =6, AFO n =43) and negative (STTO n =17, AFO n=64) critique.

Participants stated 'The current training is very applicable and as realistic as it can be (5A, AFO)' and 'It gives us the knowledge of the capabilities of the weapon to give better understanding when it would be effective in certain situations (17C, STTO)'. Whilst others were critical 'Training is very rushed and there seems to be a high expectation on us to perform despite little contact time we have (33B, AFO)' or 'Training is basic and very artificial compared to real life scenarios (3B, STTO)'.

Mental Health training (Q26_2) - Again, 71% of the comments (*N*= 105) were associated with training and how this prepares officers to deal with individual's in mental health crisis. The results were largely negative and critical of the current

training provided; with positive (STTO *n* =1, AFO *n* =17) opinion being outweighed by negative (STTO *n* =27 , AFO *n*=60) critique.

The only positive STTO comment was ‘Mental crisis is incorporated into training scenarios (15C, STTO)’ with an AFO stating ‘Training provides situations of dealing with 'suspects' who are displaying crisis (21F, AFO)’ and ‘We aren't mental health experts, there's always room for improvement, but I feel we receive enough training (42A, AFO).

Some of the critical comments included ‘I can't remember having any training. You're either effective at communication or you're not. Training will only prepare you for contingencies if the suspect won't co-operate (5C, STTO)’, to ‘Little input other than NCALT computer packages. Occasional scenario in practical training (344B, AFO)’ and ‘Not medically trained to assess there, working off assumption and best guess (20E, STTO)’.

Role related equipment (Q26_3) - This sought to understand how issued equipment may be an influence on the participant’s role.

The results were unremarkable and accounting for 52% broadly split between a ‘neutral’ or ‘other’ coded response. The neutral comments included ‘Our kit has always been very good. Better facilities for quick name checks etc would be good (7A, AFO)’; ‘A uniformed PC has enough equipment to defend themselves from incidents they are likely to attend (48, STTO)’; ‘Taser, Asp, Handcuffs and your comms [communication] skills cover most things (188, STTO)’ and ‘Operational equipment available gives me the ability to deal with more serious incidents (23E, AFO)’. The ‘other’ responses were too broad to thematically analyse, but ranged from building entry equipment, to IT related issues or a non-specific lack of investment.

Mental health related equipment (Q26_4) - This examined how issues equipment may influence a response to an individual with mental health issues.

Comments (*N*=36) were critical and related to the availability or capability of Less lethal options; with positive (STTO *n* =0, AFO *n* =1) opinion being outweighed by negative (STTO *n* =13, AFO *n*=22) critique.

The only positive comment was 'Good range of non-lethal options (20A, AFO)', but the 40% of the comments were critical.

The negative critique included 'There is no specific equipment for persons suffering MH within the Met that I am aware of (178, STTO)'; 'As above [Taser is a great tool but CS is useless and batons are ineffective] (10C, STTO)' and 'Gives me an ability to deal with more serious incidents in a less lethal way. Access to more readily available AEP[11] would give me distance and time to react and deescalate incident without having a person too close (23E, AFO)'.

The police role as first responders to mental health crisis was articulated where participants stated 'We do not have access to people's mental health history. Often taking people to places (hospitals) they are not known to (22B, STTO)' and 'I feel police are heavily relied on for mental health and need more support from other agencies (11E, STTO)'

In summary, the Likert responses indicated that mental health training and role related equipment was perceived more adequate for AFO than STTO. The free text responses were mixed and with opinion divided between the sub-groups and required a thematic analysis to appreciate the issues. Role related training identified as a core topic, with some participants being supportive whilst others were critical of the quality, frequency and lack of realism in exercises. Both STTO and AFO were significantly critical of mental health training and the issues this presents responding operationally to a person in crisis. There was a clear indication from the sample, there is a limited range of 'equipment' to safely deal with a person in mental health crisis who has 'capability' and is violent or at risk of harm.

[11] AEP is an acronym for Attenuating Energy Projectile, commonly referred to as Baton Gun or Plastic Bullets.

4.3 MPS Use of Force (MPSUoF) Dataset Analysis

As previously discussed, the entire MPSUoF dataset is substantial and worthy of a future study. For the purpose of this thesis it will only be used to bring operational context to the research survey questionnaire, permitting a comparative analysis of unarmed versus armed paradigm to contrast the tactical approaches between STTO and AFO.

To analyse the raw MPSUoF data, the researcher coded the MPS Excel sheet transfering the complete MPSUoF dataset onto SPSS (Coding key is shown in Appendix D). The complete MPSUoF 2018/19 dataset contained a total of 132,410 entries with 222,136 UoF tactics reported. The statistical analysis conducted on the MPSUoF dataset is contained within Appendix H.

4.3.1 Analysis of MPSUoF variables

A number of contextual Yes/No variables were recorded and multiple combination entries were permitted to indicate more than one subset variable. These include:

Primary Conduct
Defines conduct from compliant, to verbal, active or passive resistance and active, aggressive or aggravated resistance.

Impact Factor
These are factors the officer believes may have influenced the incident and include alcohol, drugs, mental health, previous knowledge, possession of a weapon, acute behavioural disorder and size gender build.

Outcome
Includes arrested, escaped, detained at hospital or mental health facility and fatality.

Reason for Force
Broadly classified as Protection (of public, self, another), Prevention (offence, harm, escape), Effect (arrest, search) or other.

Primary Conduct.

MPS officers are able to record the 'Primary Conduct' of the subject within six categories; compliant, passive resistance, verbal resistance or gestures, active resistance, aggressive resistance and serious or aggressive resistance. For the purposes of this thesis, these are broadly categorised as 'compliant' or 'non-compliant' (Chart 7) and when analysed were statistically significant (χ^2=1167.01, p <.001, *df*=2).

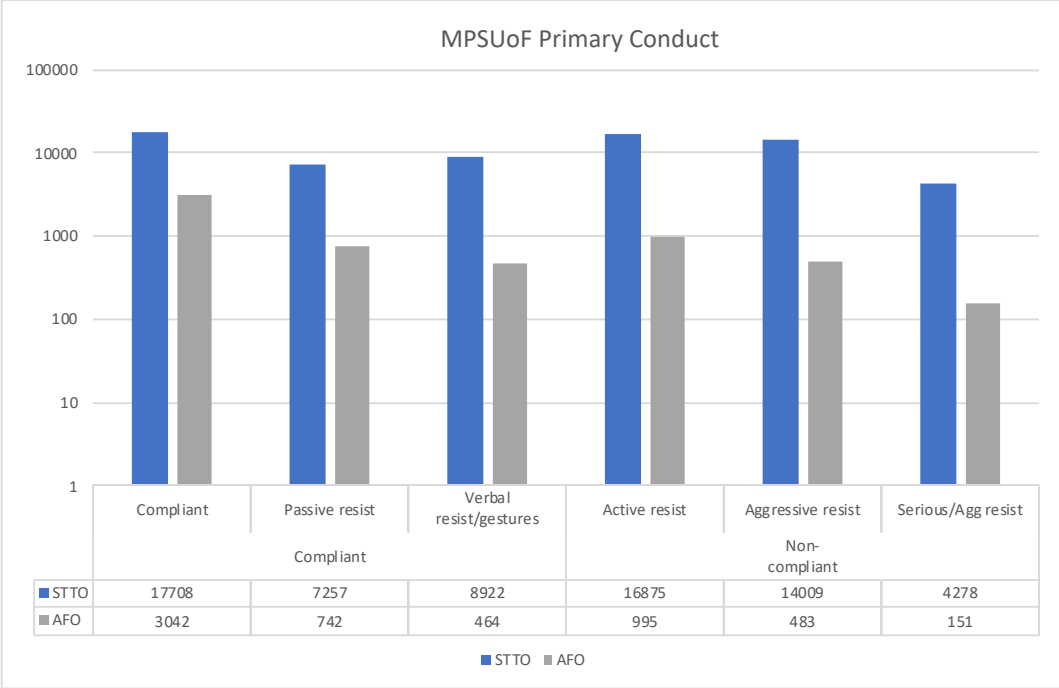


Chart 7. MPSUoF Primary Conduct (MPS, 2019).

In comparison to STTO, the Primary Conduct of 'compliant' subjects was proportionally higher for AFO (Compliant - STTO 49.1% *n*=33887, AFO 72.3% *n*=4248; Non-compliant - STTO 50.9% *n*=25162, AFO 27.7%, *n*=1629).

The STTO and AFO tactical response options were analysed for both ‘compliant’ (r_s=.732, p < .001, df=25, STTO n=33887, AFO n=4248) and ‘non-compliant’ subjects (r_s=.918, p < .001, df=25, STTO n=35162, AFO n=1629). Analysing the type of conduct against STTO and AFO tactical options, each are highly linearly correlated suggesting a high degree of similarity. Chart 8 visualises the range of tactical options employed, where a subject’s conduct is indicated as ‘compliant’ or ‘non-compliant’.

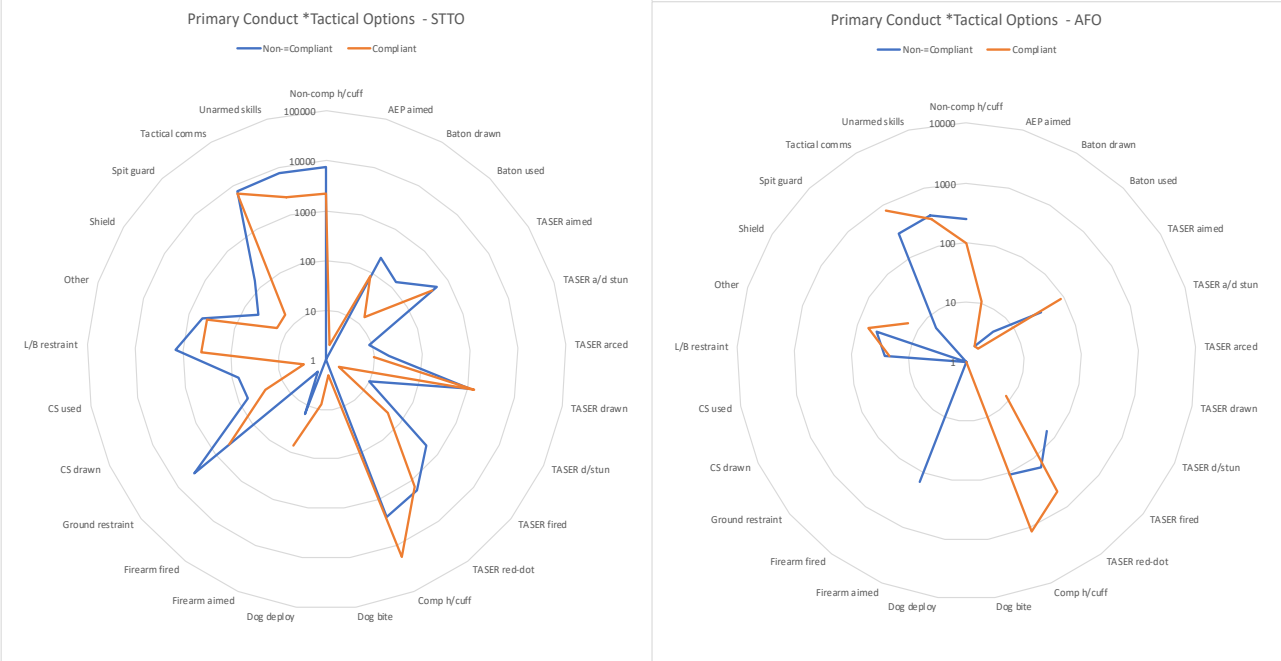


Chart 8. Primary Conduct * STTO/AFO Tactical Options.

The nearly complete ring indicated the STTO sub-group use a wider range of options for both ‘compliant’ and ‘non-compliant’ subjects. The AFO sub-group did not use some of the tactics and therefore this is not recorded on the chart. Discussed later, whilst the tactics used for a ‘non-compliant’ subject were statistically similar, the AFO range of tactics were narrower with the ‘use’ of TASER or Firearms dominant. Compared to STTO which employed more options broadly and specifically the use of restraint for a ‘compliant’ subject.

Impact Factors.

MPS officers are able to record nine 'Impact Factors'; these are Alcohol, Acute Behavioural Disorder, Drugs, Mental Health, Crowd, Other, Possession of a Weapon, Prior Knowledge and Size, Gender or Build. For the purposes of this thesis these are categorised as 'Individual' or 'Physical' type risk factors (Chart 9).

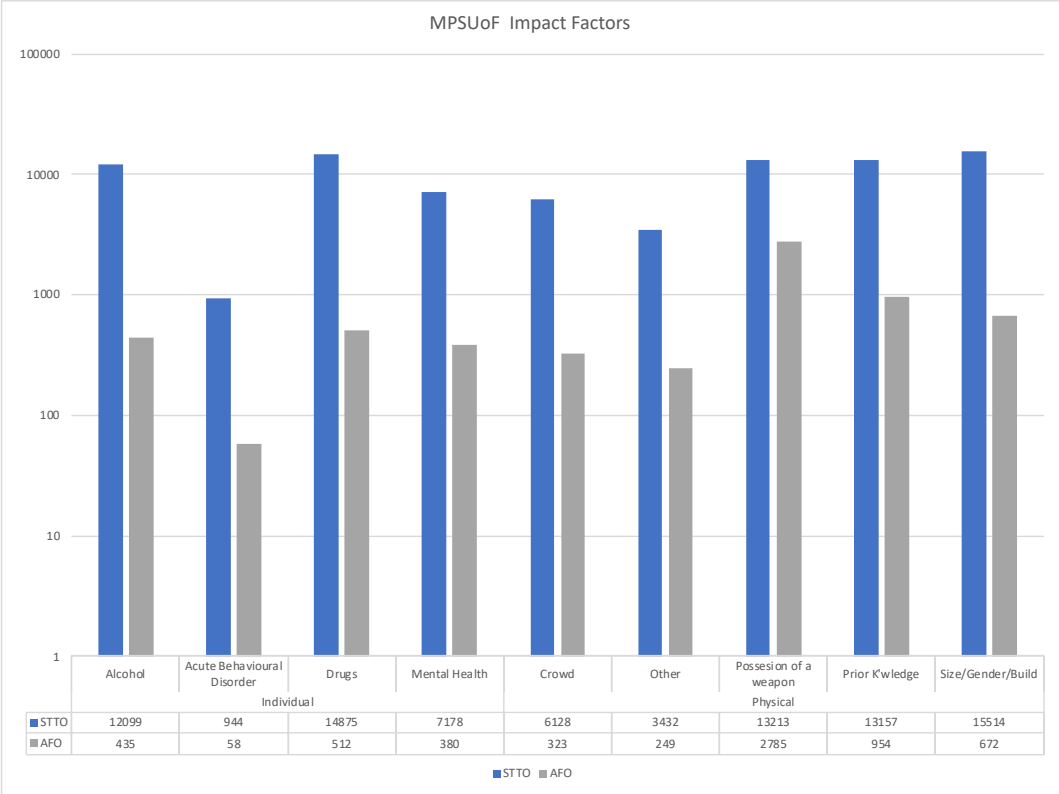


Chart 9. MPSUoF Impact Factor (MPS, 2019).

The 'Individual' (STTO 40.6%, *n*=35096; AFO 21.7%, *n*=1385) and 'Physical' (STTO 59.8%, *n*=51444; AFO 78.3%, *n*=4983) factors were statistically significant (χ^2=878.79, p <.001, *df*=2; *N*=92908).

Impact Factor		Total (n)	Spearmans (r_s)	ChiSq
Alcohol	STTO	21459	0.911	860.68
	AFO	728		
Drugs	STTO	24634	0.924	1115.46
	AFO	815		
Mental Health	STTO	13393	0.832	263.98
	AFO	629		
ABD	STTO	2075	0.895	32.28
	AFO	104		

Table 15. MPSUoF 'Individual' Impact Factor

The STTO/ AFO tactical options employed were analysed against the four 'Individual' risk impact factors and statistically significant results (n=25, df=2, p < .001) were reported for Alcohol, Drugs, Acute Behavioural Disorder (ABD) and Mental Health in Table 15. Strong and statistically significant associations (df=25, p < .001) in the similarity of tactical response options for STTO and AFO were identified with each reporting a high linear correlation suggesting a high degree of similarity for each.

Impact Factor		Total (n)	Spearmans (r_s)	ChiSq
Possession Weapon	STTO	22540	0.665	263.98
	AFO	4418		

Table 16. MPSUoF 'Individual' Impact Factor

Table 16 shows the tactical response for 'Possession of a weapon' (n=25, df=2, p < .001) was also statistically significant and linearly correlated suggesting a high degree of similarity; and notably this accounted for 43.7% of the recorded AFO 'Impact Factors'.

For the purposes of this thesis; specifically analysing a subject's 'Primary Conduct' with 'Mental Health' as an 'Impact Factor' was statistically significant and linearly correlated suggesting a high degree of similarity in STTO and AFO response (r_s=.848, p < .001, df=25, STTO n=13393, AFO n=653) across the range of tactical options. Discussed later, although statistically significant, when categorised as 'Compliant' (r_s=.775, p < .001, df=25, STTO n=4376, AFO n=366) it was not as

strong as the identified 'non-compliant' correlation (r_s=.949, p < .001, df=25, STTO n=9017, AFO n=287), which indicated the similarity of a trained response.

Outcome.

MPS officers are able to record five Outcomes for the incident; these 'Made off/ escaped', 'Arrested', 'Hospitalised', 'Detained- Mental Health Act' and 'Other'. Analysis of the incident Outcome (Chart 10) was statistically significant (χ^2=86522.526, p < .001, STTO n=42532, AFO n=3764) and strongly associated (r_s=1.000, p < .001, df=5). The outcome was proportionally similar between the STTO and AFO sample.

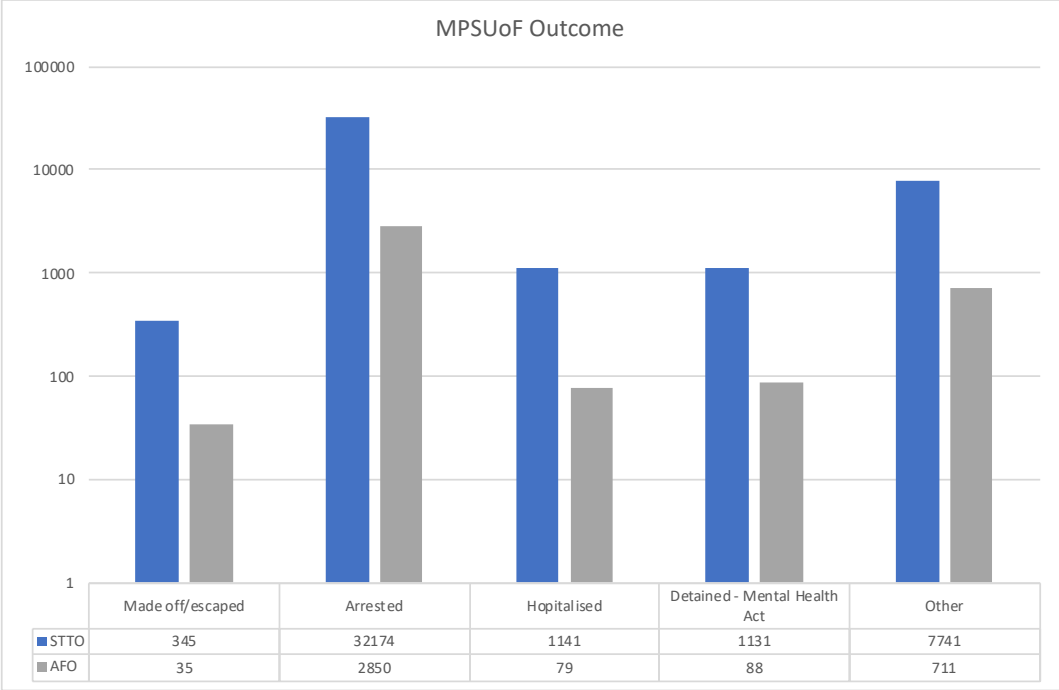


Chart 10. MPSUoF Outcome (MPS, 2019).

Reason for Force

Analysis of Reason for Force (RfF) was intentionally restricted in scope to answering the research questions. With multiple entries permitted per incident, thirteen variables were available for the officer to record the Reason for Force. These may be broadly classified as 'Protection' (public, self or another), 'Prevention' (offence, harm or escape), 'Effect' (arrest or search) or 'Other'. Chi-Square test identified each of these variables was statistically significant (p <.001, df=25, N= 300403) and for completeness this is reported in Appendix H.

Comparative analysis was conducted on RfF records against those containing 'Impact Factors' involving risk to the 'Individual' e.g. 'Alcohol', 'ABD', 'Drugs', 'Mental Health' or where the subject was in 'Possession of a Weapon'. A total of 300,403 variables were identified, with strong and statistically significant associations identified across the analysed variables (r_s=.929, p < .001, df=12, STTO n=272111, AFO n=28292). Chart 11 visualises the similarity in RfF between STTO and AFO.

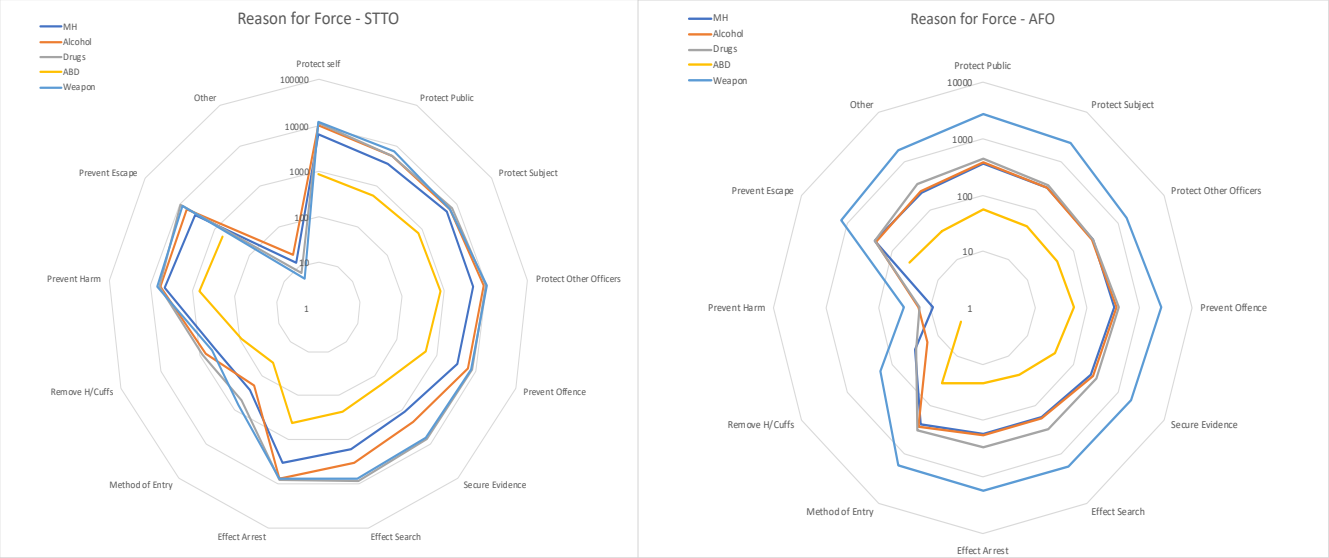


Chart 11. Comparison of STTO and AFO Reason for Force * Impact Factor.

Table 17 shows that for each RfF variable there were statistically significant and linearly correlated associations identified; suggesting a high degree of similarity for Impact Factors namely 'Alcohol', 'ABD', 'Drugs', 'Mental Health' and 'Possession of a Weapon'. Whilst RfF is statistically significant and similar, AFO cite the RfF as 'Other' across the complete range of analysed Impact Factor variables, whilst this is not used by STTO. Conversely, STTO use 'Prevent Harm' significantly more than AFO as a reason for using force.

Impact Factor		Total (n)	Spearmans (r_s)
MH	STTO	38306	0.923
	AFO	2564	
Alcohol	STTO	63490	0.889
	AFO	2693	
Drugs	STTO	82388	0.861
	AFO	3257	
ABD	STTO	5842	0.963
	AFO	403	
Possession Weapon	STTO	82085	0.857
	AFO	19375	

Note: N =300403, $p < .001$, df =25

Table 17. Correlation of RfF Impact Factors

4.3.2 Tactical Effectiveness

This section will discuss the STTO and AFO tactical 'effectiveness'. STTO (*n*=42,532) reported 32.1% of the total MPSUoF incidents with AFO (*n*=3,764) accounting for 2.8%. The complete range of differing tactics employed by both sample sub-groups (STTO *n*=73,208; AFO *n*=6,081) was analysed and found to be statistically significant (χ^2=8.529, p <.01, *df*=1, STTO *n*=42532; AFO *n*=3764).

Officers record their use of force against a singular or range of tactics employed and include the order in which they were applied. Against each tactical option, officers indicate 'effective' or 'non-effective', which enables a percentage calculation to define the 'effectiveness' for comparison between sub-groups. e.g. TASER-aimed by STTO: Effective = 718, Non-Effective= 282 equals a 72% effective use of TASER when aimed by STTO. This enables an examination of proficiency in either selecting the option or applying it. Contextual factors e.g. primary conduct, impact, reason for force were analysed against each other to identify if there were any measurable associations for both STTO and AFO.

There are twenty-five tactics available for officers to record and these may be broadly characterised as complaint, force presented not used, restraint, physical force and TASER or Firearms tactics.

Chart 12 visualises the overall percentage effectiveness between the sample sub-groups across each tactic. With the outer ring indicating 100% effective, as the AFO sub-group did not report use of some of the tactical options the chart converges on the centre at 0% e.g. no reported use of 'Firearms Fired'. This chart visualises the broader range of options used by STTO but also visualises the narrower or 'tactically focussed' use of firearms related options by AFO.

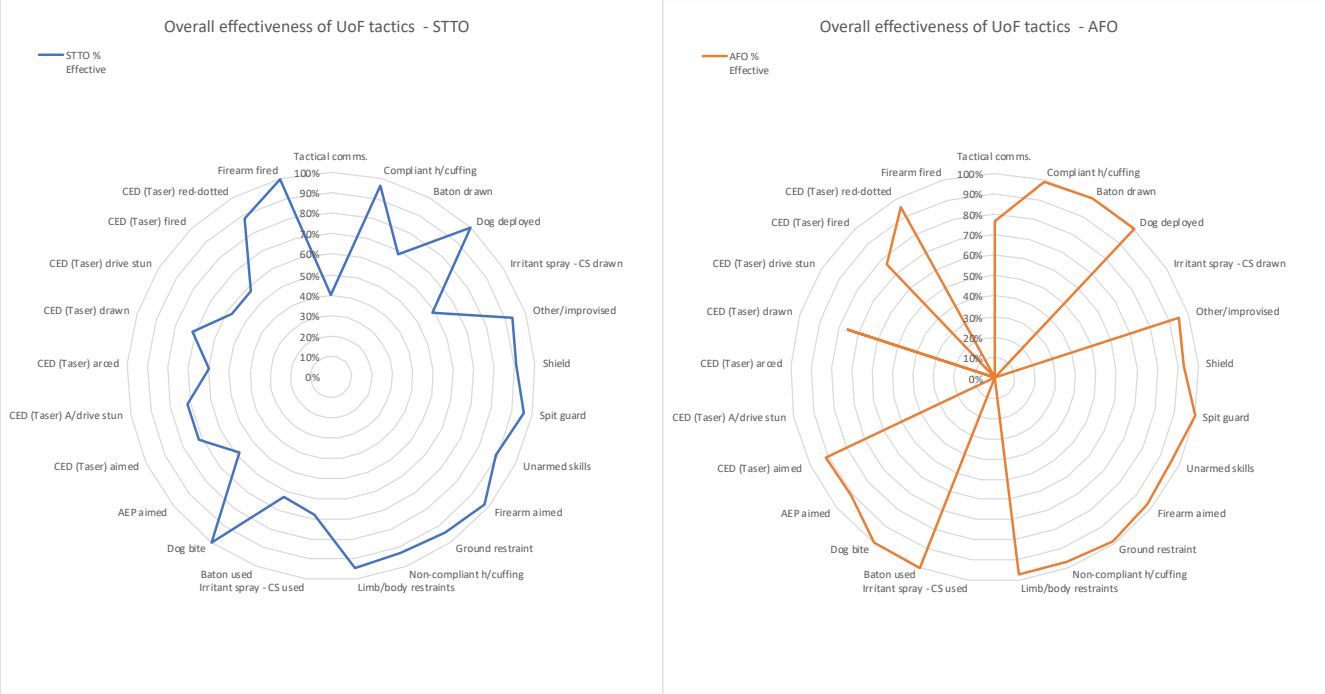


Chart 12. Overall percentage effectiveness of UoF tactics (MPS, 2019).

Examining each of the 25 tactics individually enabled the effectiveness or proficiency between STTO and AFO to be statistically established. Comparing across all of the options (*n*=25) there are statistically significant associations in tactical effectiveness between STTO and AFO. When analysing all the UoF tactics employed by STTO (*n*=73208) they were 81% effective in their use compared to AFO (*n*=6081) at 92% effective. The association of effectiveness between groups was statistically significant and linearly correlated suggesting a high degree of similarity (Effective r_s=.709, non-effective r_s=.548, *n*=79289, $p < .001$, *df*=25).

Analysing the dataset, STTO and AFO tactical approaches can be determined and the observed effectiveness statistically compared. The MPSUoF dataset collated the tactics and order they were applied. Illustrated by Table 18 below, the cumulative proportion of 'effective' tactics is similar between STTO and AFO, with approximately 95% of encounters being resolved after three tactical options.

	STTO	SFO	STTO		AFO		Spearman coefficient($r_{s)}$	
	(*n*)	(*n*)	Effective %	Cumulative %	Effective %	Cumulative %	Y	N
Tactic 1	42532	3764	58.10%	58.10%	61.90%	61.90%	0.737	0.650
Tactic 2	18890	1569	25.80%	83.90%	25.80%	87.70%	0.779	0.698
Tactic 3	7627	544	10.42%	94.32%	8.95%	96.65%	0.767	0.696
Tactic 4	2880	161	3.93%	98.25%	2.65%	99.29%	0.390	0.114

Note: (Tactics 1-4) N =77967, p < .001, df =25

Table 18. Comparison of STTO and AFO UoF effectiveness.

Analysing the broad approach between STTO and AFO, it was statistically significant and linearly correlated suggesting a high degree of similarity in effectiveness within the first three tactics reported. Whilst there is still a statistically significant association in the use of Tactic 4, the observed count for AFO was significantly lower than expected.

Baton and Irritant Spray.

In comparison with other options, the observed use of Irritant spray and Baton for both groups was low and employed in only 0.95% (N=753) of all UoF incidents. This low usage was also reflected in the survey questionnaire.

	STTO				**AFO**				**Correlation (r_s) STTO/ ARV**	
	Yes (*n*)	**No (*n*)**	**Effective %**	**Total**	**Yes (*n*)**	**No (*n*)**	**Effective %**	**Total**	**Yes**	**No**
Irritant spray - CS drawn	64	45	59%	109	0	0	0%	0	0.000	0.000
Irritant spray - CS used	61	29	68%	90	0	0	0%	0	0.273	-0.115
Baton drawn	224	104	68%	328	4	0	100%	4	0.891	0.000
Baton used	136	79	63%	215	7	0	100%	7	0.805	0.000

Note: p < .001, df =2

Table 19. Baton and Irritant spray use - Observed use and correlation

Table 19 shows that Irritant spray ($\chi 2$=1, df=2, STTO n= 199, AFO n=0), was reported ‘used’ or ‘drawn’ in only 0.25% of UoF incidents. AFO did not report any usage of Irritant Spray, with STTO indicating it was effective in 63% of encounters; with a small statistically significant association was identified between STTO and AFO when ‘used’.

The use of Baton ($\chi 2$=.019, *df*=2, STTO *n*= 543, AFO *n*=11) was statistically significant and reported in only 0.7% of incidents. Again, AFO usage was very small, with an overall effectiveness of 67% for Baton drawn or used.

TASER.

	STTO				AFO				Correlation (r_s) STTO/ ARV	
	Yes (*n*)	No (*n*)	Effective %	Total	Yes (*n*)	No (*n*)	Effective %	Total	Yes	No
CED (Taser) aimed	718	282	72%	1000	116	11	91%	127	0.980	0.834
CED (Taser) drawn	1788	722	71%	2510	38	12	76%	50	0.996	0.935
CED (Taser) fired	496	369	57%	865	62	19	77%	81	0.718	0.724
CED (Taser) red-dotted	2919	387	88%	3306	631	29	96%	660	0.999	0.776

Note: $p < .001$, $df = 2$

Table 20. TASER - Observed use and correlation

The two sub-groups observed use and correlation of TASER as a tactical option was compared (Table 20). This indicated the higher reported percentage effectiveness for AFO compared to STTO when the TASER was 'Aimed', 'Drawn', 'Fired' or 'Red-Dotted'. The use of TASER between STTO and AFO was statistically significant and linearly correlated suggesting a high degree of similarity.

Tactical Communication and Unarmed Skills.

The effectiveness of tactical communication between STTO and AFO was statistically significant ($\chi 2$=564.519, $p < .001$, *df*=1), with STTO (*n*=14247) reporting this was only 40% effective, compared to AFO (*n* =1088) at 77%.

The use of unarmed skills between STTO and AFO was statistically significant ($\chi 2$=23.816, $p < .001$, *df*=1), with STTO (*n*=10619) reporting this was only 89% effective, compared to AFO (*n* =659) at 95%.

4.3.3 Selection of tactical options

Each tactical option was ranked (Table 21) identifying a statistically significant association in tactics employed across the sample (r_s=.968, p < .001, df=25, STTO n=73208, AFO n=6074).

STTO			AFO		
Rank	Tactic	*(n)*	Rank	Tactic	*(n)*
1	Compliant handcuffing	20524	1	Compliant handcuffing	1331
2	Tactical communications	14247	2	Firearm aimed	1263
3	Unarmed skills	10619	3	Tactical communications	1088
4	Non-compliant handcuffing	10279	4	CED (Taser) red-dotted	659
5	Ground restraint	4987	5	Unarmed skills	659
6	CED (Taser) red-dotted	3306	6	Non-compliant handcuffing	361
7	CED (Taser) drawn	2510	7	Ground restraint	232
8	Limb/body restraints	2318	8	CED (Taser) aimed	127
9	Other/improvised	1165	9	Other/improvised	96
10	CED (Taser) aimed	1000	10	CED (Taser) fired	81
11	CED (Taser) fired	865	11	Shield	60
12	Baton drawn	328	12	CED (Taser) drawn	50
13	Spit guard	251	13	Limb/body restraints	36
14	Baton used	215	14	AEP aimed	11
15	Irritant spray - CS drawn	109	15	Baton used	7
16	CED (Taser) drive stun	94	16	Spit guard	6
17	CED (Taser) arced	93	17	Baton drawn	4
18	Irritant spray - CS used	90	18	Dog bite	2
19	Firearm aimed	86	19	Dog deployed	1
20	Shield	75	20=	CED (Taser) angle drive stun	0
21	CED (Taser) angle drive stun	21	20=	CED (Taser) arced	0
22	AEP aimed	12	20=	CED (Taser) drive stun	0
23	Dog deployed	9	20=	Firearm fired	0
24	Dog bite	3	20=	Irritant spray - CS drawn	0
25	Firearm fired	2	20=	Irritant spray - CS used	0

Table 21. STTO and AFO ranked use of force options.

Discussed later, whilst the tactical options are statistically similar there is a small difference in the ranking between the STTO or AFO options selected; where STTO appear to utilise ‘Restraint’ earlier in comparison to AFO who employ ‘TASER or Firearms’ tactics.

There are two police firearms discharges (Table 21) reported within the 2018/19 MPSUoF dataset. This thesis will not discuss the context as both incidents are still subject to an ongoing investigation.

Incident	1	2
Date	09/09/2018	Not Recorded
Time (hrs)	16:50	17:47
Borough	Not Recorded	Not Recorded
Type of Location	Public area	Public area
Ethnicity	White	Black
Gender	Male	Male
Age	18-34	25-49
Impact Factor	Possesion of a Weapon	Prior Knowledge
Primary Conduct	Serious/ Aggravated Resist.	Active Resist
Reason for Force	Protect Self Protect other Officers Effect Arrest Prevent Escape	Effect Arrest Prevent Escape
Outcome	Arrested	Arrested

Table 21. Reported MPS Firearms discharges (MPSUoF, 2019).

Other than ‘possession of a weapon’ there are no other ‘high-risk’ impact factors indicated. Both incidents were recorded on the MPSUoF database by an STTO and not the AFO utilising force, potentially creating inaccuracy in the recording of risk factors.

5. Discussion

This chapter will discuss the findings and as part of this examine the sample for representativeness.

Split into broad sections, this chapter will examine motivation and behavioural reaction to conflict stimulus and the effectiveness of tactical response. Analysis of the research survey questionnaire and MPSUoF dataset will be compared against the STTO or AFO sample sub-groups. Examining the research survey questionnaire to understand how officers develop operational proficiency in conflict resolution. The findings from this research are contrasted against existing literature to enable contextually relevant inferences to be drawn examining themes relating to the core and sub-research questions, specifically:

RQ1: ‘How does an Authorised Firearms Officer (AFO) compared with unarmed Specially Trained TASER Officer (STTO) policing affect decision making?’.

RQ1a: Do routinely unarmed (STTO) officers respond differently to their routinely armed counterparts during (conflict?) interactions with the public?

RQ1b: Is there any difference in decision making or the subsequent application of force between an AFO and unarmed officer to resolve an incident with a PMI?

RQ1c: Do ‘high risk’ groups mean officers are more likely to use certain strategies?

RQ1d: How does the AFO response to those they perceive are intent on self-harm differ to unarmed officers?

5.1 Analysis of Satisfaction or Motivation factors

Participants were asked to consider a variety of daily role and task related functions to understand the satisfaction or motivation each provides.

AFO's reported a statistically significant association in satisfaction was obtained when helping 'Vulnerable Persons', completing crime or role (firearms) specific related tasks. Whilst the STTO group indicated they gained satisfaction from specific role related tasks e.g. searching suspects, detecting crime and public order; and when compared with AFO, no statistical motivational association was established within the STTO group for the same variables or tasks. Overall, both groups share a majority of motivational associations and these appear to be gained through recognition, learning, enjoyment and personal stimulus. However, when comparing sub-groups, the results indicate a broader shared association within AFO responses and an inconsistent correlation within the STTO group.

Applying general strain theory, Hendy (2019) argues a 'failure to achieve positively valued goals' (Agnew 1992, p.51) creates an aspirational driven motivational strain between intended and actual outcome. This may lead to negative emotions in 'events or conditions that are disliked by individual's' (Agnew 2006, p.4) creating goal-driven conflict (Agnew 1992, 2006; Hendy, 2019). There appears a contrast between the perception of doing 'real police work' with danger, excitement and the actual reality of the role, where officers frequently perform a function as a social service (Newburn, 2007; Pogrebin and Poole, 2003; Van Maanen, 1973; Waddington, 1999).

The survey questionnaire results indicate motivational factors which may be influenced by role. Where the STTO sample is drawn from the wider MPS workforce, the role related remit and tasks performed by an unarmed STTO is broad; with functions which they *must* perform but may consider mundane or gain little 'goal-driven satisfaction' from completing. In contrast the AFO sample is taken from a small number of specialist units, with a specific and reduced remit e.g. dealing with Firearms Crime and the results indicate they gain 'goal-driven satisfaction' from completing these role related tasks.

5.2 Behavioural typology and reaction to stimulus

Similar to later survey questions, Q16 listed a number of scenario where the neutrally labelled 'person' posed an escalating threat or risk. This sought to understand if there was a relationship between the reaction to stimulus or a conflict situation and contrasts this with established behavioural typology for police officers. The results will also be compared later using the same scenarios, with differing terms of 'suspect' or victim'.

Officer's attitudinal or behavioural responses may be classified within numerous theoretical frameworks developed to examine police culture e.g. Terrill and Reisig (2003), Muir (1977) or Brown, (1981). There appears a strain between operational and organisational pressure (Terrill and Reisig, 2003). In an occupational setting, officers manage danger with a coercive influence by being distrustful or maintaining an 'edge' over the citizen (Rubinstein, 1973; Terrill and Reisig, 2003; Skolnick, 1994; Van Maanen, 1973). Whilst the broad nature of police work may create an organisational and potentially punitive procedural strain for the officer; in response they may avoid contentious police work or focus on less ambiguous incidents e.g. crime orientated roles where a response is more clearly defined (Brown,1988; Herbert, 2006; Skolnick, 1994, 2011; Van Maanen, 1973).

Muir (1977) studied the function and variability in officers' characteristics arguing this influenced the use of coercive tactics or force. Where a *professional* is confident to use force, conversely the *enforcer* uses a 'good/ bad' binary assessment with a ready ability to use force to resolve encounters. The *reciprocator* is reluctant and cautious in using force or coercion, whilst the *avoider* is anxious in using force or coercion and any public facing duties.

Brown (1981) inductive approach similarly defines four operational officer typologies (Fig. 6) based upon aggressiveness and selectivity. For example, Brown (1981) argues the 'aggressive' officer, considers their efficacy or function as proactive crime control with selective recourse to legal or legitimate norms (Worden, 1995).

	Aggressiveness	
Selectivity	High	Low
Selective	Old-Sytle Crime Fighter	Service Style
Non-selective	Clean-Beat Crime Fighter	Professional Style

Figure 6. Browns (1981) typology (Worden, 1995, p.55).

The survey questionnaire identified a statistically significant difference in reaction between groups. It appears at the point where the threat or risk increases, AFO showed a stronger reaction to the conflict stimulus, compared to the STTO group where there is no identifiable association. At a lower threat or risk, STTO inclination to 'always' engage was generally higher than for AFO. This may be attributable to role, where the STTO function is to initially respond and resolve the incident. The survey questionnaire indicates where the level of threat posed by the subject is deemed insignificant, the AFO appears reluctant to engage. Anecdotally, in an operational context, there is a likelihood the AFO would request for unarmed support to assist and deal with the incident instead.

However, as the risk or threat increases, the operational capability gap between STTO and AFO to resolve a significant threat also increases and the survey questionnaire responses differ. In accepting the alternative hypothesis e.g. there is a difference in response, a lack of association within the STTO group may attributable to their role related limitations and operational capability. As initial 'unarmed' responders, the STTO group will expect tactical support and an AFO led response in incidents which may exceed their capability. The survey questionnaire response from the AFO group concurs with the literature; as the subject's capability (firearm) and intent (harm) became clearer, AFOs have a 'conflict impetus' or positive reaction to the escalating threat. Developed through heuristics, whether in training, by operational experience or exposure, it enables AFO's to exploit a 'recognition primed'

response to mitigate an increased threat or risk earlier (Gladwell, 2007; Bryant *et al*., 2016; Klein, Calderwood and McGregor, 1989; Burrows, 2007). Whilst a central police function is to intervene and prevent conflict, it requires a combination persuasion or coercive control to find a resolution in difficult or complex incidents (Herbert, 2006). There are similarities between STTO survey responses to engage with the subject to maintain an 'edge' (Terrill and Reisig, 2003) and the non-selective 'professional' style indicated by the averse AFO responses to lower risk scenarios (Brown, 1981; Muir, 1977).

5.3 Influencing and developing proficiency in conflict resolution

Whilst police have the unique power to use force or coercion, a capable or skilful officer has the ability to avert its necessity (Bittner, 1974; Muir, 1977). The *'crude law of social relations'* (Deutsch and Coleman, 2000) considers the reciprocal behavioural influence within conflict resolution. Cooperative (compliant) relationships develop when the aims of each party are clearly associated, whilst competitive (defiant) situations arise when the aims are contradictory or disparate (Braithwaite 1998; Deutsch and Coleman, 2000) Where parties employ or implement 'strategies which involve power or use coercive tactics, threats, or deception' (Hendy, 2019, p.30) this may affect the ability to resolve a conflict. A reciprocal breakdown occurs when either party determines due to behavioural influence of the other their goals are not being realised (Alpert and Dunham, 2004).

The survey questionnaire sought to understand how officers resolve conflict and what influences or contributes to their proficiency in resolving it. As previously discussed, an officer's role and responsibilities are complex and wide-ranging, requiring them to deal with people whose behaviour may be considered either compliant or defiant. Turk (1969), applying *Norm resistance theory,* suggests conflict arises from the issue of authority and how the law is implemented, especially where there is a cultural variance between the authorities or affected party. Increasing and refining training or experience of the actors decreases the likelihood of conflict (Boulton and Cole, 2016; Turk, 1969).

The survey questionnaire indicated a difference of the influence that training has between the sub-groups in developing an ability to resolve conflict. It appears the

influence of training was lower for STTO than the AFO group, with the later more reliant on the application of classroom and practical based theory. In addition to 'normal' policing skills, there are technical aspects for AFOs to consider e.g. weapon handling, firearms tactics etc. The survey questionnaire suggests AFO supplement training with both classroom and experiential learning, to consolidate and contribute to their ability to resolve conflict. It may be inferred using this survey questionnaire and analysis of MPSUoF data, an AFO's enhanced training influences their performance and operational ability in resolving conflict.

5.4 The proficiency of tactical responses

To understand the implications of using certain tactics, the survey included a set of inter-related questions to compare AFO and STTO responses. This set of questions each consisted of two parts; the incident type and the tactical options employed.

Using the research survey questionnaire and MPSUoF data this section will discuss and define the 'effectiveness' of any tactical response for both sample sub-groups. When an officer records the use of force within the MPSUoF database, they note the range of tactics and order of use, indicating 'effective' or 'non-effective' against each particular tactical option. In practise, this signifies whether the tactical option achieved its intended aim in mitigating the threat or risk posed by the subject. A percentage calculation of both the recorded 'effective' or 'non-effective' tactical options was used to compare sub-groups. To develop and define understanding on how effective a tactical option was in the mitigation of threat or risk; MPSUoF data was used to validate and quantify the survey questionnaire responses of 'effective' or 'non-effective' e.g. TASER-aimed by STTO: Effective = 718, Non-Effective= 282 equals a 72% effective use of TASER when aimed by STTO.

5.4.1 Effective tactical responses

The survey questionnaire indicated proportionally more 'firearms' incidents were nominated by AFO than STTO, with 'mental health' (STTO *n*= 36, AFO *n*=70), 'arresting suspects' (STTO *n*= 29, AFO *n*=67) and 'violent crime' (STTO *n*= 13, AFO *n*=58) also selected by both groups. This appears attributable to role related operational responsibility e.g. STTO will be the initial police responders to mental health calls, whilst only AFOs will be specifically directed to firearms related incidents.

The MPSUoF dataset indicated the overall effectiveness of all tactical options used by STTO and AFO was 82% (*n*=79829). In comparison, AFO were 91% (*n*=6081) effective compared to STTO at 81% (*n*=73208). Although some of the variables contained within the survey questionnaire are not specifically listed within the MPSUoF dataset, inferences may be drawn. MPSUoF data indicates a strong association in the tactical options used and order they are employed by the sample sub-groups. However, the officer's role and capability e.g. unarmed STTO vs AFO, with the specific situational or behavioural 'Impact Factors' (Table 22) may influence the effectiveness of that initial option.

MPSUoF recorded Impact Factors					
Impact Factor		STTO		AFO	
			%		%
Individual	Alcohol	12099	14.0%	435	6.8%
	Acute Behavioural Disorder	944	1.1%	58	0.9%
	Drugs	14875	17.2%	512	8.0%
	Mental Health	7178	8.3%	380	6.0%
Physical	Crowd	6128	7.1%	323	5.1%
	Other	3432	4.0%	249	3.9%
	Possesion of a weapon	13213	15.3%	2785	43.7%
	Prior K'wledge	13157	15.2%	954	15.0%
	Size/Gender/Build	15514	17.9%	672	10.6%
	Total	86540	-	6368	-

Table 22. Impact Factors - MPSUoF 2018/19 dataset.

In comparison with the survey questionnaire, reported Impact Factors for possession of a weapon (STTO 31.1%, *n*= 13213; AFO 74%, *n*= 2785) and mental health (STTO 16.9%, *n*= 7178; AFO 10.1%, *n*= 380) appear to proportionally reflect the survey questionnaire results.

The subject's Primary Conduct was recorded within the MPSUoF dataset (Table 23).

Primary Conduct		STTO		AFO	
		n	%	*n*	%
Compliant	Passive resistance	4483	10.5	443	11.8
	Compliant	14234	33.5	2151	57.1
	Verbal resistance/gestures	6033	14.2	300	8
Non-Compliant	Active resistance	8960	21.1	536	14.2
	Aggressive resistance	6858	16.1	258	6.9
	Serious or aggravated resistance	1964	4.6	76	2
Total		40568	-	3688	-

Table 23. Primary Conduct - MPSUoF 2018/19 dataset.

Violent crime may be inferred from the subject's recorded Primary Conduct and compared to the survey questionnaire results. Aggregating the frequencies for aggressive, active and serious or aggravated resistance (STTO 20.7%, *n*= 8822; AFO 8.9%, *n*= 334) it suggests the survey questionnaire results are reflective of the MPSUoF dataset in dealing with non-compliant subjects.

Within the survey questionnaire, the effectiveness of 'communication' and 'time or space to de-escalate' was higher for AFO than for STTO. The effectiveness of 'tactical communication' reported in the MPSUoF dataset again differed between groups, with STTO encounters (*n*=14247) reporting a 40% effectiveness, compared to AFO (*n* =1088) at 77% effective.

Whilst there was a strong statistically significant correlation in effectiveness between sample groups, the efficiency in using TASER was higher for AFO (96%, *n* =660) than for STTO (88%, *n*=3306). The choice to 'use' a tactical option is subjective with training, experiences, or contextual circumstances influencing use and potentially its effectiveness. Again, this result appears attributable to a number of contextual or role related proficiency factors; including weapon handling (ability or familiarity) or the use of TASER as part of a prearranged tactical option.

For AFO, the survey questionnaire and MPSUoF results appear to reflect the literature. AFOs receive enhanced communication training, including basic crisis negotiation and to achieve compliance AFOs train to provide the subject 'time or

space' to de-escalate confrontation (Garner *et al*., 1996; Johnson, 2011; Kesic, Thomas and Ogloff, 2012; Klein, 2006; Lord, 2014; McKenzie, 2006; Parent and Verdun-Jones, 1998; Pinizzotto, Davis and Miller, 2005; Ruiz and Miller, 2004; Van Zandt, 1993). AFO's will usually have sufficient resources immediately at the scene to physically negate a threat. A resultant effect of training or operational experience is an enhanced 'recognition primed' response to threat or risk (Burrows, 2007; Bryant *et al*., 2017; Gladwell, 2007; Klein, Calderwood and MacGregor 1989).

Within the context of the survey questionnaire, STTO perceive that 'firearms' and 'baton gun' were more effective in de-escalating or resolving incident than the AFO sub-group. The MPSUoF data also reflected the survey questionnaire, with STTO reporting the effectiveness of Firearms (aimed/ fired) was higher than for AFO (STTO 98.8%, *n*= 88; AFO 97%, *n*= 1264). However, the use of AEP[12] Baton Gun (STTO 58%, *n*= 12; AFO 91%, *n*= 11) indicated it was effective in mitigating the threat or risk in a smaller percentage of STTO reported incidents, with a low overall observed count. As STTO are not trained to use firearm or baton gun their survey questionnaire responses may be attributable to a perception of effectiveness rather than an operationally based informed opinion.

5.4.2 Non-effective tactical responses

The survey questionnaire identified both sub-groups proportionally selected 64% of the same incident types, where tactics that had been utilised were ineffective. These included 'violent crime' (11%, STTO *n*= 25, AFO *n*=56), 'public order' (16%, STTO *n*= 14, AFO *n*=56), 'mental health' (19%, STTO *n*= 24, AFO *n*=55) and 'arresting suspects' (19%, STTO *n*= 25, AFO *n*=56). Four specific tactics represented 80% of the total reported as ineffective and when examined further account for 61% of the first or second option chosen. These were, 'communication' (*n*= 265; STTO= 6.5%, AFO= 19.9%), 'de-escalation' (*n*= 169; STTO= 3.4%, AFO= 12.8%), 'OST [13] techniques' (*n*= 144; STTO= 12.8%, AFO= 2.1%) and 'restraint' (*n*= 199; STTO= 3.3%, AFO= 6.5%). There may be specific situational or context related factors which have influenced this decision or ineffectiveness.

[12] AEP is an acronym for Attenuating Energy Projectile, commonly referred to as Baton Gun or Plastic Bullets.
[13] OST is an acronym for Officer Safety Training.

Communication.

Comparing the survey questionnaire to MPSUoF data it gives an indication of the overall *effectiveness* of 'communication' (STTO 40%, *n*= 14247; AFO 77%, *n*= 1088). There are large differences reported between STTO and AFO effective use of 'communication' within the first three tactics used; with STTO effectiveness in Tactic 1 at 35% (*n*=11660), Tactic 2 at 65% (*n*=1766) and Tactic 3 at 53% (*n*=533), and AFO Tactic 1 72% (*n*=785), Tactic 2 at 90% (*n*=249) and Tactic 3 at 89% (*n*=44). Discussed previously, it is recognised that due to situational or environmental factors the use of communication may not be as effective on each occasion. There appears an interdependency with the subject and their cognitive 'ability to coherently interpret visual or auditory stimuli' (Hendy, 2019, p.34). Where this reciprocal ability is impaired through alcohol, drugs or mental health, the likelihood of a coercive response increases (Hendy, 2019; Mastrofski *et al.,* 2016).

However, the reported effective use of communication appears a factor in reducing the necessity for the use of coercive tactics. Through regular training and feedback, skills can be taught, rehearsed and refined. An enhanced knowledge of crisis negotiation improves the recognition of stress or other indicators, priming and pre-empting the officer's response to mitigate threat or risk (Burrows, 2007; Boulton and Cole, 2016; Bryant *et al*., 2017; Gladwell, 2007; Klein, Calderwood and MacGregor 1989, Turk, 1969).

Less Lethal options.

In contrast with the survey questionnaire findings, the MPSUoF data indicated the effectiveness of 'unarmed skills' (OST techniques) (STTO 89%, *n*= 10619; AFO 95%, *n*= 659) and 'restraint' (Ground /Limb) (STTO 94%, *n*= 6902; AFO 98%, *n*= 269) were high and similar across the sample sub-groups.

Both groups indicated in the survey questionnaire a reluctance to use 'baton' or 'irritant spray' (CS or equivalent), where the observed use in the MPSUoF dataset was low and employed in only 0.95% reported UoF incidents. The MPSUoF data indicates the effectiveness for both 'baton' (STTO 66%, *n*= 543; AFO 100%, *n*= 11) and 'Irritant spray' (STTO 63%, *n*= 199; AFO 0%, *n*= 0) is low with mixed results between sub-groups. Whilst these may be referred to as a 'less lethal' options, their

use appears to create a tactical limitation for the responder, placing them in closer proximity to a subject or threat. An additional consequential effect of 'irritant spray' is the officer may also be potentially incapacitated. As AFO's do not train to use personal issue 'CS incapacitant spray' within a firearms context and this was not utilised in over 6000 recorded UoF tactics, it may be implied this is not a feasible option for AFO use. For STTO, at 0.25% its limited use would need further examination. Whilst this disinclination removes two effective available options, with more unarmed officers being trained as STTO, it also infers a preference for the use of restraint or TASER.

Dependant on the circumstances less lethal options may be more proportionate and give a 'differentiated use of force' (Burrows, 2007, p.280). They are broad ranging options from communication, physical restraint to baton, irritant spray, TASER or even AEP (plastic bullet) rounds and dependant on the context each have limitations. Usually deployed by AFO's in parallel with conventional firearms, less lethal options form part of a holistic strategy; however, use is subjective and employed either pre-emptively or reactionary in order to prevent crime or potentially save life (Burrows, 2007; Sharf and Binder, 1983; Thomas, 1972).

5.4.3 Summary

The survey questionnaire is reflective of MPSUoF dataset analysis which identified strong statistically significant associations in both STTO and AFO (N= 79289, df=25) application of tactical options. The research survey questionnaire and MPSUoF dataset indicates the tactical option(s) and order in which they are employed are statistically similar. Both sub-groups report the initial use of compliance through communication, where STTO appear to use restraint earlier than AFO which employ TASER or Firearms before restraint type options. As discussed before, this may be role or task specific, necessitating using the full AFO capability earlier within an incident e.g. firearms aimed. The data indicates the AFO sub-group are more proficient or 'effective' in the range of tactical options applied.

5.5 Approaches to resolving conflict

Officers will naturally apply heuristic techniques or erudite methods which they consider effective in resolving a confrontational situation. This question sought to understand how an officer's behavioural reaction to stress affects their response to an individual who is confrontational or intimidating.

Entitlement theory defines how belief structures or 'working models' influence an expectation of entitlement for 'care and regard' throughout an individual's life (Ainsworth, 1973; Lieberman, 1977; Kingshott *et al*., 2004). These 'working models' are basic cognitive processes that offer some structure and security to an individual's existence (Wolfe, 1998). Each person will 'ultimately find[..] their 'place' in the world relative to others – who 'counts' and who does not, who is entitled to care' (Kingshot *et al*., 2004, p.193). The evaluation of an individual's 'service-entitlement' (Hendy, 2019, p.63) may change during an encounter (Lipsky, 1980). For example, an officer may assess an individual's position and therefore their 'service-entitlement'; which may alter as they transition from victim or witness to suspect, or conversely, suspect to victim (Holstege *et al.*, 2009; Homant, Kennedy and Hupp, 2000; Lipsky, 1980; Patton and Fremouw, 2016; Wolfgang, 1957;).

Discussed earlier, an officers naturally distrustful nature may affect their ability to sympathise or act in a mutually respectful way towards an individual, who is not be behaving in a 'conventional manner'. The police culture of 'us against them' (Kingshott, 2004, p.189) may also encourage more of a heuristic response and as a 'street-level bureaucrat', generate an illiberal or authoritarian response (Brown, 1992; Hendy, 2019; Kingshott, 2004; Lipsky, 1980).

In response to the survey questionnaire question 'What do you think is the best way to deal with them?', the only statistically significant response was 'character – imposing authoritative personality as a police officer', scoring higher for AFO. Arguably, until a confrontational or intimidating stimulus is mitigated, the AFO may need to initially employ an authoritarian response or reduce the individual's level of 'service-entitlement'. Associations across the sample groups were identified in the survey questionnaire for the use of time to de-escalate with rapport, communication or temperament. Where AFO showed an association between experience with time

to de-escalate, communication and temperament, in contrast STTO did not record any correlation between the same variables.

Indicated within the MPSUoF dataset active, aggressive or serious/aggravated resistance was identified as Primary Conduct in 41.8% STTO (n= 17782) and 23.1% AFO (n=870) encounters; the overall effectiveness of tactical communication for AFO of 77% (n=1088) and a successful reported use within the 1st Tactic of 72%. As previously discussed, AFO's receive enhanced training in the application and use of effective communication. Through training AFO's calm and composed response reduces the potential for confrontation, with the use of 'time or space' to de-escalate an incident (Garner *et al*., 1996; Johnson, 2011; Kesic, Thomas and Ogloff, 2012; Klein, 2006; Lord, 2014; McKenzie, 2006; Parent and Verdun-Jones, 1998; Pinizzotto, Davis and Miller, 2005; Ruiz and Miller, 2004; Van Zandt, 1993).

The results from this set of survey questionnaire questions are largely inconclusive for both sub-groups. However, in the AFO role, the use of personal (calm, communication) or police officer role related attributes (authoritarian, coercive) may be an effective technique to influence or resolve a confrontational situation.

5.6 The effect of labelling

The individual, contextual and situational factors mean that each use of force incident is potentially unique and developing an understanding is challenging. A set of survey questionnaire four questions each containing eight scenario based sub-questions, were used to analyse the sample responses. All questions were similar in style, with the subject label either being described as a 'suspect' or 'victim'. The scale of threat or risk posed by a subject increased from passive to potentially violent towards another and their mental condition was defined. Participants were requested to rank using a 1-9 scale the order tactical options were either used or *not* utilised. The four question sets generated 33,905 variables responses. Where the individual in the survey questionnaire was labelled as a 'suspect' or 'victim' or in a neutral term, STTO and AFO survey questionnaire responses and tactical options chosen were broadly similar; this applied for tactics for both utilised tactics and those not employed.

In each set of questions as the threat, risk or capability of the subject increased, the results between the sub-groups became less similar and the STTO responses deviated from AFO. In comparison to other results within this survey questionnaire and as discussed previously, this difference between STTO and AFO may be due to role and operational capability. However, whilst this slight variation may be attributable to increase in threat from the subject and a difference in operational capability between sub-groups; in contrast with the literature the change in labelling or status from a 'suspect' to a 'victim' the did not appear to influence the responses for either group (Holstege *et al.*, 2009; Homant, Kennedy and Hupp, 2000; Patton and Fremouw, 2016, Wolfgang, 1957;).

The MPSUoF data does not identify the subject's status as a suspect or victim. Analysis of the MPSUoF dataset identified an overall strong association in the application and effectiveness of tactical options selected by both STTO and AFO (r_s=.968, p < .001, df=25, STTO n=73208, AFO n=6074). In addition, further analysis of each individual tactical option revealed equally significant associations in STTO and AFO use. This operational use of force reflects and validates the survey questionnaire results.

5.7 Equipment and training

5.7.1 Training

Whilst the AFO group indicated their training prepared them to deal with an individual in mental crisis, in contrast STTO indicated there was a requirement for more reality-based scenarios and theory based 'training' to enhance their operational performance. Officers requested an increased frequency of time allocated to both STTO and AFO training. It appears the expectations from officers to receive role related, effective and realistic training were high and whilst being met for some this was apparently not the case for others. STTO and AFO indicated a requirement for enhanced mental health training and for STTO to have the ability to operationally deploy with NHS mental health counterparts.

5.7.2 Equipment

The survey questionnaire responses relating to role equipment were unremarkable, broad and split both within the sub-groups and across the sample as a whole. However, the survey questionnaire responses did identify a strong negative critique of specific equipment which may influence their response to an individual in mental health crisis. In analysing the free text responses and MPSUoF data, STTO indicate a requirement for accessing more coercive equipment; compared to AFO who have access to extra equipment but are seeking to de-escalate the incident by using 'distance, time and space'.

5.8.3 Summary

Discussed earlier, a 'recognition primed' decision model enhances awareness of critical environmental indicators reducing the cognitive challenge during an incident (Boulton and Cole, 2016; Fiore *et al*., 2012; Lipshitz *et al*., 2001; Loveday *et al*., 2013). Excluding operational exposure; training is a safer and relatively risk-free method of enhancing a responder's heuristic or cognitive decision making ability in environments that are potentially hazardous or where the risk to others is significant e.g. aviation (Boulton and Cole, 2016; Klein and Militello, 2001; Orasanu and Fischer, 1997; Seamster *et al*., 1993). Clearly, there is a balance for the MPS, in providing sufficient training to be recognised as 'occupationally competent' (College of Policing,

2019) and a perception of the quantity of training an officer may personally require. Through experiential learning or exposure to operational deployments, officers will in time develop heuristic shortcuts or ‘adaptive expertise’ (Boulton and Cole, 2016, p.292) and regular assessments ensures the standard is maintained (Burrows, 2007).

There is a difference between STTO and AFO roles, where generally AFO indicate satisfaction with the equipment the survey questionnaire results appear to divide opinion within the AFO group. Based on role specific training e.g. AFO, ARV etc. there are conflicting responses on whether additional mental health training is required. Similarly, STTO indicate they require more equipment and training to better respond to individual’s in mental health crisis.

5.8 Inferences

Discussed earlier, much of the survey questionnaire data is ordinal in nature and with a small sample size, caution should be applied to any inferences drawn from this research. However, the MPSUoF data is a valid comparator to understand, develop upon and give an operational context to the survey questionnaire results.

Reflecting the literature and survey questionnaire, both sub-groups contrast their attitudinal perception of doing 'real police work' with some of the more mundane daily tasks required from the police service. However, within the survey questionnaire both indicate a there is a motivational satisfaction gained from helping vulnerable people and crime related tasks. For officers performing a specialist role e.g. AFO, it may be inferred the goal-driven or role related tasks act as an additional stimulus to their motivation or performance. An indication of the overall performance for both sub-groups may be measured and calculated by the use of 'effective' or 'non-effective' tactical options applied within the MPSUoF. In comparison to STTO, the overall AFO effective performance is higher across the complete range of reported tactical options.

The survey questionnaire indicated a behavioural difference in response to the threat or risk posed by the subject; STTO intervened to a point where the threat exceeded their operational capability, whereas AFO responses revealed a selective engagement threshold only as the threat or risk increased. This may be attributable to role related factors where, dependant on risk, there is an implied mutual expectation of support from the 'unarmed' STTO or AFO responders.

To discuss some of the research questions and inferences which may be drawn from this research:

RQ1b: Is there any difference in decision making or the subsequent application of force between an AFO and unarmed STTO to resolve an incident with a Person with Mental Illness (PMI)?

The research survey questionnaire and MPSUoF data indicate the tactical response to a person with mental illness (PMI), tactical options selected and effectiveness is

statistically similar. Whilst the range of options available creates a capability difference between STTO and AFO, the data implies there is minimal difference in the actual operational response or use of force between the sample sub-groups.

The MPSUoF dataset records the subject's 'Primary Conduct' within a range of options and for this research this was categorised as 'compliant' (compliant, verbal, active or passive resistance) and 'non-compliant' (active, aggressive or aggravated resistance). Analysis of a 'non-compliant' PMI, indicated a strong association in the type of tactical options utilised by both sample sub-groups. However, when a compliant PMI was analysed, there was a variation between the sample sub-groups in tactics and response. In comparison, the range of options utilised by AFO was narrower than STTO. It may be inferred this variance is a result of the role specific AFO function e.g. Firearms aimed and the appropriate effective use of specific tactical options to mitigate the threat or risk.

RQ1c: Do 'high risk' groups mean officers are more likely to use certain strategies?

There are moderate differences in reported behavioural or impact factors that high-risk groups initially present. However, the sub-group responses to a subject displaying risk 'Impact Factors' (alcohol, ABD, drugs, mental health) were strongly associated across the range of tactics to suggest there is minimal difference in the application of force between STTO and AFO. Where a subject was in possession of a weapon, there is a variation between sub-groups, with AFO using a combination of 'firearms' and 'TASER' tactics in over 42% of reported encounters.

By examining each of the individual risk 'Impact Factors' against the tactical option used, 'communication' is ranked as the first option used by both STTO and AFO to seek compliance. There is a variation in effectiveness, where AFO report 77% success when using 'communication' compared to STTO at only 40%. There also appears a small variation in the type of tactical options employed between the sample. In comparison with STTO, the percentage use[14] of TASER by AFO is proportionally twice as much where risk 'Impact Factors' are reported; and similarly, percentage of restraint by STTO was used in almost twice the number of incidents compared to AFO.

[14] 'Use' includes drawn, red-dotted, aimed or fired.

For STTO the recorded primary conduct appeared evenly split between ‘passive’ or ‘aggressive’, in comparison to AFO where over 70% of conduct was ‘Passive’. The association and tactical response between STTO and AFO to an ‘aggressive’ subject was statistically similar. However, where the subject’s behaviour was initially reported as ‘passive’ there was a difference between the sample in association and tactics used. This appears attributable to contextual factors and use of AFO role specific tactics e.g. firearms aimed; compared to STTO who utilise the broadest range of available options in their ‘unarmed’ response.

Whilst this research and MPSUoF data indicate small difference, the response strategies are statistically similar between both sub-groups. The use of ‘compliance’ or ‘force presented not used’ appear to be the main tactical approaches employed to gain the subject’s compliance. However, where a subject is in possession of a weapon, both sub-groups utilise TASER and restraint options.

RQ1d: How does the AFO response to those they perceive are intent on self-harm differ to unarmed officers?

There is minimal difference in the tactical response to a person intent on self-harm. The AFO remit appears to marginally influence the order tactical options are utilised and their effectiveness; where STTO may use restraint earlier, AFO may use Firearms or TASER tactics. Whilst this response may be attributable to the type of threat or risk encountered, it may also be inferred the difference in STTO performance is a resultant effect of limited training. AFO’s benefit from enhanced and regular practical or theory-based training, providing an iterative improvement to augment a ‘professional’ response to a PMI or in resolving conflict e.g. effective use of communication and/or selective use of coercion.

In answering the main research question - RQ1: ‘How does an Authorised Firearms Officer (AFO) compared with unarmed Specially Trained TASER Officer (STTO) policing affect ‘conflict’ decision making?’.

The research survey questionnaire and MPSUoF data indicates STTO and AFO responses are strong and statistically associated, suggesting there is minimal difference in the application of force. It may be also inferred from this the decision-making processes of the sample sub-groups is similar. However, the role, associated enhanced capability and training appears to improve the AFO ability to respond. The training appears to improve the proficiency of any response, effective decision making and reduces the cognitive burden to react in constantly evolving situations (Alison *et al*., 2007; Flin and Arbuthnot, 2002). Rapid evaluation of an incident is enhanced by erudite knowledge and the responder’s skill level to dynamically make or adapt decisions to mitigate a changing threat (Boulton, 2016; Alison *et al*., 2007; Hastie, 2001; Klein, Calderwood and MacGregor 1989; Yates, Venott and Patalano 2003). Intuitive processing of key situational or behavioural indicators may also be improved through heuristics, developing role proficiency to become ‘recognition primed’ or ‘conditioned’ through experiential learning (Burrows, 2007; Klein, Calderwood and MacGregor 1989).

The survey questionnaire indicated that STTO would engage a subject up to a certain threshold until their capability (weapon) and intent (harm) were clearer. Contradicting the literature, survey responses did not alter whether the subject was labelled as mentally ill, a ‘suspect’ or a ‘victim’, but were consistent and focussed on the threat or risk (Hendy, 2019; Holstege *et al.*, 2009; Homant, Kennedy and Hupp, 2000; Lipsky, 1980; Patton and Fremouw, 2016; Snipes and Mastrofski, 1990; Wolfgang, 1957). An ‘unarmed’ officer has a capability limit and where the threat or risk exceeds this ability to protect themselves or another, the ‘perception’ of danger to engage a subject beyond this threshold appears understandable (Homant, Kennedy and Hupp, 2000). Police officers have to adapt and employ different techniques within this unarmed paradox to engage with a dangerous subject and due to this perception or ‘dangerousness’ bias may use more coercive methods to resolve it (Alpert, 1989; Garner *et al*., 1996; Johnson, 2011; Knutsson and Strype, 2003; MacDonald *et al.*, 2001; Miller, 2015; Ruiz and Miller, 2004; Short *et al*., 2014; Watson, Corrigan and Ottati, 2004; Wood, Watson and Fulambarker, 2016).

The initial interaction point, communication and direct series of events thereafter are all equally influential to the probability of lethal force being used (Fridell and Binder, 1992). AFOs enhanced and live training practise, is reflected within the MPSUoF data, where the reported and effective use of communication is significantly higher than for STTO, restraining the need for more coercive strategies (Azizi, 2010; Best and Quigley, 2003; Garner *et al*., 1996; Johnson, 2011; Lord, 2014; McKenzie, 2006; Mohandie and Meloy, 2010; Pinizzotto *et al.,* 2012; Pinizzotto, Davis and Miller, 2005).

An additional consequence of the enhanced AFO's training and/or role related capability is where coercive strategies are employed, in comparison to STTO the AFO sub-group are more proficient in the application of all tactical options. This enhanced AFO demonstrates an operational ability as an 'expert practitioner' in resolving conflict (Burrows, 2007; Klein, Calderwood and MacGregor 1989). Therefore, whilst there is a marginal difference in decision-making ability this appears attributable to the enhanced training that AFOs receive.

The next section concludes this thesis, examines the research methodology, findings and makes recommendations for consideration to improve current knowledge and operational practise.

6. Conclusion

The aim of this research was to broaden academic and operational awareness of a unique and complex area. The 'Suicide by Cop' (SbC) phenomenon is a rare occurrence and has been described as a 'high impact low probability' type of event. There is a duty for the police to intervene (and potentially use force) in instances where a vulnerable person, with 'lethality of means', initiates self-destructive violent conduct and presents a significant risk or threat to him/herself or another.

This research seeks to develop an understanding of the use of force paradigm within the England & Wales (E&W) policing context. The majority of SbC research is generated within the United States of America (USA) and whilst informative, there are obvious differences in both culture and policing context with E&W. It is believed this type of research in E&W is necessary, not only to sustain public confidence or police legitimacy, but to enhance an awareness for responders or support services in nullifying a vulnerable individual's SbC ideation. Using a mixed method approach, this research sought to understand the use of force paradigm within an E&W policing context. This used the literature review to act as a framework for the design of a survey questionnaire of operational MPS STTO and AFO officers. Analysis of MPSUoF data was used to validate and add value to the survey questionnaire qualitative responses.

The research survey questionnaire (*N*=315) and MPSUoF (*N*=132410) data indicate there is minimal difference in the application of force between STTO and AFO officers. The overall range of tactics used by AFO was narrower than STTO and appeared centred around firearms tactics. Individually analysing the tactics, AFO indicated a better proficiency with a higher percentage of effective use when compared to STTO. This appears attributable to the enhanced training which influencing AFO decision-making ability and producing a more effective performance in conflict resolution.

The research survey questionnaire indicates the sample sub-groups obtain motivational satisfaction form helping vulnerable people and role related involvement in crime orientated duties e.g. searching suspects. Where officers specialise within a specific role e.g. AFO, the survey questionnaire results suggest the tasks may act as

an additional stimulus, enhancing their overall motivation and/or performance. Whilst the survey questionnaire indicates a similarity in the tactical *options* selected, there appears a difference in *response* based upon the threat or risk presented by the subject. AFO were selective in responding to 'lower threat', with a conflict stimulated response as the threat or risk increased. Conversely, while STTO intervened in the lower level incidents earlier than AFO, their responses altered as the threat increased or exceeded their operational capability. However, the influence of organisational culture should not be discounted, as there is a mutual unspoken silo belief of remaining within role specific functions, whether in an '*unarmed'* STTO or AFO role. Therefore, this 'selective engagement threshold' may also be attributable to role related characteristics.

The MPSUoF data indicated the STTO and AFO response to a PMI or 'high risk' subject was statistically similar and there was a minimal difference in operational response or use of force across the sample. Minor variations in the application of tactics or range of options employed were identified, notably where the subject was reported as 'Passive'. This variance between AFO and STTO appears to be a resultant effect of role specific functions and within this, appropriate and effective tactical options are selected to mitigate any threat or risk. The survey questionnaire and MPSUoF data also indicate the selection of tactical options and the order in which they are utilised may influence the effectiveness of the option, requiring the officer to utilise additional UoF options to resolve the encounter.

Whilst the type of threat or risk may denote a specific response, the training and capability of the responder influences performance. Where AFO's receive enhanced frequent practical or theory-based training, this appears to indicate an enhanced response and associated performance e.g. effective use of communication and/or selective use of coercion. The survey questionnaire results and MPSUoF data suggest by limiting STTO initial or refresher training this may impact upon their overall tactical ability and their skill level or proficiency. Additionally, where STTO capability is limited they may use restraint earlier compared to AFO who have the ability to select and apply both Firearms or TASER tactics. As discussed earlier, this research appears to reflect the literature; in that training conditions a 'primed' response to stimulus and has subsequent influences on critical decision making. In comparison to STTO; AFO selection, training and continual assessment enhances

the individual decision-making capability, enabling effective use of tactics to de-escalate or respond to conflict stimulus appropriately.

In considering the central SbC topic area: What inferences relating to SbC and the police use of force may be drawn from this research?

The mode of arming to police within E&W is reflective of the unarmed public they are tasked to serve. The MPS policing model is replicated across E&W, where response to incidents are largely unarmed. Any response is threat or risk dependant and may necessitate additional support from STTO or AFO trained staff, providing 'scale of response' and an increased capability should it be required. The policing context in E&W may be described as an 'unarmed paradox' (Knutsson and Strype, 2003) where unarmed officers operate within a 'restraint paradigm' (Squires and Kennison, 2010, p.1) using minimal force, within the law and against a citizen. This model advocates the legitimacy of the police to serve the public. Within this model, armed officers may be utilised to respond to protect the public where the threat or risk exceeds the capability of the unarmed police officer. The literature discussed the significance of heuristics upon decision making, especially where there is a physiological reaction to a perceived threat or harmful stimulus. Discussing the literature, enables an understanding of the effect that training has upon conditioning a 'primed' response to mitigate threat (Burrows, 2007; Klein, Calderwood and MacGregor, 1989). Familiarisation with stress reduces cognitive burden or 'task saturation' for the responder and where possible may permit the use of conflict resolution tactics to de-escalate an incident.

Officers patrol and respond to incidents within their training, force policy and law, but the *nature* of their response within this operating framework is fundamentally autonomous. Where an incident exceeds the capability of unarmed officers, firearms operations are commanded by a senior officer directing any AFO response to mitigate the threat or risk. However, even within these incidents, the operational effectiveness is reliant on the proficiency of the firearms officer and their decision-making abilities to subsequently implement tactical options. This research has examined two groups of officers who have received enhanced training and have additional coercive capability to resolve incidents. In comparing the sub-groups

survey questionnaire and MPS use of force data, there are marginal differences in their response or tactical effectiveness to a person with mental illness.

In comparison to the USA where every police responder is armed, the mode of arming and initial police response in E&W differs. The scaled 'mode of arming' e.g. unarmed to STTO to AFO, with diverse range of 'unarmed' tactics innately restrains any operational response. This appears to remove the immediate capability and limit a subject's ability to fulfil their suicidal ideation by using this SbC proxy method.

Where a vulnerable individual, who poses a substantial risk or threat to himself or another, engages in a course of conduct, the research results imply the initial 'unarmed' response, 'mode of arming', training and application of tactics may be responsible in effectively 'restraining' a police response. The occurrence of SbC or similar 'near miss' type incidents which are averted is not currently measured and is reliant on post-incident investigations to improve operational practise. Arguably, this 'normalisation of deviance' (Haddon-Cave, 2006) and acceptance of events as they stand does little to develop or understand the causal chain within an E&W context. This research may only predict the operational response in E&W to a potential SbC, but though analysis of UoF data it is able to understand the response options employed by STTO and AFO to a subject displaying 'high risk' factors. Further case study analysis of E&W police shootings or averted incidents is required, to develop a fuller understanding.

Critical analysis of the literature identifies the multitude of suicide definitions create a challenge to define SbC which may be described as a complex and 'wicked problem' (Grint, 2008). The combination of sociological strain, vulnerability and risk factors may increase the likelihood of suicidal ideation. The stark challenge in researching SbC is validating any hypothesis, as if suicidal ideation has been achieved the person is deceased. With limited accounts from individuals who have attempted SbC and survived, the main developments in understanding SbC have been made using post-incident case studies. Where an individual with suicidal ideation, utilises the police as a means of realisation, it creates a no-win situation for responders and an operational dilemma in assessing the subject's intent whilst mitigating their threat. The next section discusses some of the recommendations generated by this research.

7. Recommendations

The findings from this research generate six recommendations. These are categorised in themes and Table 24 references the research or supporting literature.

Recommendation 1. *Research: Proactive research programme*

An active research programme should be considered a priority to identify preventative strategies for both suicide and SbC. It is suggested a collaborative multi-discipline research approach with the involvement of both public health and police professionals is required. Supported by accurate data records, practitioner field-based research is required to innovatively exploit opportunities and support those in mental crisis. Since Best and Quigley (2003) the 'lessons' from fatal encounters have enhanced police understanding of SbC, evolving the SbC operational response in England and Wales (E&W). Whilst improvements are welcomed, these are a reactive response to criticism following fatal encounters. Commissioning a proactive research study will develop a deeper understanding of all encounters with the mentally ill, including key risks and context when force is likely to be used in a SbC. This recommendation would seek to research the demand placed upon the police service, review the operational responses and the scale of force used by police in E&W.

Recommendation 2. *Definition*: *Develop suicide and SbC classifications*

Defining SbC is critical to establish a common understanding and advancing research of this phenomenon. The definition of suicide needs to be simplified. Within this, limited classification types e.g. SbC to provide a workable multi-discipline definition which may assist in establishing Coronial verdicts or be commonly used in research across a number of fields. This thesis did not examine Religious or Terrorist inspired suicide, 'Murder Suicide' or 'Rampage' suicide incidents. These events appear to support the 'victim precipitated suicide' hypothesis (Wolfgang, 1957) and contemporary research may present opportunities to influence prospective studies or establish new theories which may be aligned with SbC.

Recommendation 3. *Education* and *Influence*: *Increase public awareness*

There are global and national preventative strategies or 'action plans' to reduce the number of suicides. Considered a public health problem, both mental health and suicide have commonly held stigmas attached to them. This recommendation suggests a research programme supported by a pragmatic suicide definition will assist in influencing or educating public opinion. There is a cultural stigma attached to suicide. Through an education and public engagement strategy expose under-reporting and risk factors which increase the 'hidden' nature of suicidal ideation. SbC requires the implementation of a pro-active and pre-emptive approach to support vulnerable persons *prior* to any crisis point. Academics are able to influence policy, training, and operational practice, through research to move away from the existing 'learning by mistakes' approach. Developing an evidence base to examine methods of preventing a vulnerable person reaching the point of ideation or achieving SbC.

Recommendation 4. *Assessment*: *SbC assessment tool*

This research indicates the nature of each incident is unique, with differing approaches or responses and proficiency in conflict resolution. Police response to mental health adds to the significant operational strain, where accountability is inadvertently transferred to the police to manage, respond and mitigate the risk of suicidal ideation. Using comparative analysis of the personal, risk and intent factors, this recommendation would seek to develop a practitioner's assessment tool to understand the effect of mental health on suicidal ideation and likelihood of realisation. It is envisaged all practitioners would use this, whether community mental health specialists, first line police responders or armed officers.

Recommendation 5. *Tactical restraint: Selective coercion tactics.*

Practitioner led and supported by academics, this recommendation would seek to understand circumstances which influence the order tactical options are utilised, their effectiveness and what may be attributable to the type of threat or risk encountered. Within the E&W context, the officer's perception of "dangerousness" and recognition of 'Primary Indicators' needs to be explored; with development training to 'prime' the operational response. Where police restrain the use of (lethal) force preventing self-harm, suicide or SbC, the creation of a national database investigating 'near-miss' incidents would measure and evidence pragmatic strategies. Where officers have 'restrained' themselves from firing, this should be investigated to develop understanding of the 'perception of danger' and the influence tactical restraint has upon the decision to use force. This research identified a performance difference between sub-groups which appears an effect of limiting conflict resolution training for STTO's. This recommendation would further seek to understand and develop upon the E&W AFO response model in resolving conflict e.g. effective use of communication and/or selective but proficient use of coercion.

Recommendation 6. *Development: Equipment, tactics and operational practise*

This research identified the equipment and training to manage those in mental health crisis is lacking. A national review of 'less lethal' options is required to understand officer's proficiency, effective use of tactics and training. To minimise the use of lethal force at the point of SbC crisis, research is needed to understand what additional positive options e.g. equipment or tactics are available. All front-line responders require enhanced mental health training; supplemented with role specific practical based training and tactics to de-escalate incidents with 'high-risk' individuals. Developing upon the mental health triage scheme, a collaborative multi-agency practise should be implemented, where mental health professionals attend incidents to support first responders with an individual in crisis.

Recommendations.

	Recommendation	Source	Reference
1	*Research: Development of a proactive research programme*	Literature review	Azizi, 2010; Best, Quigley and Bailey. 2004; Culhane, Boman and Schweitzer, 2016; Dewey *et al*., 2013; Homant and Kennedy, 2000; Homant, Kennedy and Hupp, 2000; Hutson *et al*., 1998; Kesic, Thomas and Ogloff, 2012; Kingshott, 2009; Klinger, 2001; Lankford, 2015; Lord, 2014; Lord, 2012; Lord and Sloop, 2010; McKenzie, 2006; McLeod, Thomas and Kesic 2014; Miller, 2015; Mohandie, Meloy and Collins, 2009; Neitzel and Gill, 2011; Parent and Verdun-Jones, 1998; Patton and Fremouw, 2016; Pillay and Thomas, 2015; Sarno and Van Hasselt, 2014; Van Zandt,1993.
2	*Definition*: Develop academic consensus to characterise a workable multi-discipline definition for suicide and SbC research parameters.	Literature review	Azizi, 2010; Best, Quigley and Bailey. 2004; Culhane, Boman and Schweitzer, 2016; Dewey *et al*., 2013; Homant and Kennedy, 2000; Homant, Kennedy and Hupp, 2000; Hutson *et al*., 1998; Kesic, Thomas and Ogloff, 2012; Kingshott, 2009; Klinger, 2001; Lankford, 2015; Lord, 2014; Lord, 2012; Lord and Sloop, 2010; McKenzie, 2006; McLeod, Thomas and Kesic 2014; Miller, 2015; Mohandie, Meloy and Collins, 2009; Neitzel and Gill, 2011; Parent and Verdun-Jones, 1998; Patton and Fremouw, 2016; Pillay and Thomas, 2015; Sarno and Van Hasselt, 2014; Van Zandt,1993.
3	*Education* and *Influence*: *Using research to increase public awareness and influence debate*	Literature review	Squires and Kennison, 2010; McKenzie, 2006; Best and Quigley, 2003; Azizi, 2010; Morabito and Socia, 2015; Kesic, Thomas and Ogloff, 2010 Pinozzotto *et al.,* 2012; Squires and Kennison, 2010; Best and Quigley, 2003; Lord, 2014.
4	*Assessment*: Through comparative analysis of the personal, risk and intent factors develop an assessment tool to understand the effect of MH on suicidal ideation and likelihood of realisation.	Literature review; Research survey questionnaire	Drylie, 2006; Lindsay and Lester, 2004; Mohandie & Meloy, 2010; Parent and Verdun-Jones, 1998; Pillay and Thomas, 2015; Wilson *et al*., 1998; Hutson *et al*.., 1998; Lord, 2000; Homant and Kennedy, 2000; Mohandie *et al*., 2009; Booth *et al*., 2010; Miller, 2015; Ogloff *et al*., 2013.
5	*Tactical restraint*: Develop a method to record 'near miss' incidents where police restrain the use of (lethal) force preventing self-harm, suicide or SbC. Research to understand the key risks and context when force is likely to be utilised on PMI and when shots are likely to be fired.	Literature review, Research survey questionnaire, MPSUoF data	Best and Quigley, 2003; Pinizzotto *et al.,* 2012; Mohandie and Meloy, 2010; Azizi, 2010; Garner *et al*., 1996; Johnson, 2011; McKenzie, 2006; Pinizzotto, Davis and Miller, 2005; Lord, 2014; Parent and Verdun-Jones, 1998; Azizi, 2010; Mohandie and Meloy, 2010; Ho *et al*., 2007; Kesic, Thomas and Ogloff, 2012; Miller, 2015; Squires and Kennison, 2010;; Morabito and Socia, 2015;
6	*Development: Equipment, tactics and operational practise*	Literature review, Research survey questionnaire, MPSUoF data	Pillay and Thomas 2015; Brown et al., 2004; Silverman *et al.,* 2007; Mohandie and Meloy, 2010; MacDonald *et al.*, 2001; Pescosolido *et al*., 1999; Socall and Holtgraves, 1992; Alpert, 1989; Miller, 2015; Garner *et al*., 1996.

Table 24. Thematic recommendations.

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Appendix A

Author(s)	Determination of SbC intent
Best et al. (2004)	Evidence of primary/secondary indicators, state based indicators of irrationality, or minimal evidence of suicidal intention
Dewey et al. (2013)	Decided by six-member team after records review; criterion uncertain
Homant and Kennedy (2000)	Cases taken from Hutson et al. (1998) cases used their definition; cases other than Hutson et al. (1998) defined as "individuals who, bent on self-destruction, engage in threatening and criminal behavior in order to force police to shoot them (Geberth, 1990, p. 105)
Homant et al. (2000)	All cases previously identified as SbC by other sources
Hutson et al. (1998)	"Individuals stating outright that they wanted officers to shoot them, written or verbal communication to family or friends…or not dropping their weapon when advised by officers to do so and then aiming their weapon at officers or civilians" (p. 666)
Kennedy et al. (1998)	Intent determined by rating as: "probable suicide, possible suicide, uncertain suicide, suicide improbable, or no suicidal evidence" (pp. 3–4)
Kesic et al. (2012)	All five of the following, based on Hutson et al. (1998): communication of suicidal intent, gestures of suicidal intent, person stated that he/she wanted police to shoot them, possession/appearance of possession of a deadly weapon, and evidence that subject deliberately escalated the encounter to provoke police lethal response OR Three of the historical factors (e.g., chronic mental or physical health problems, suicide attempts) and five of the incident variables (e.g., possession of a deadly weapon, refusal to follow police instruction) described by Lindsay and Lester (2004, 2008)
Lord (2000)	"Individuals who, after being confronted by law enforcement officers, either verbalized their desire to be killed by law enforcement officers and/or made gestures such as pointing weapons at officers or hostages, running at officers with weapons, or throwing weapons at officers" (p. 403)
Lord (2001)	Individuals who, after being confronted by police, verbalized desire to die by SbC or who took action to enable lethal police response (e.g., pointed a weapon)
Lord (2012)	Presence of at least one primary SbC indicator as defined in Lord and Sloop (2010)
Lord (2014)	"Individuals who possessed at least one primary indicator of SbC: verbal, behavioral, or planned intent to induce officers to shoot them" (p. 85)
Lord and Gigante (2004)	Incidents in which individuals confronted by police verbalize desire for SbC or make gestures to elicit police response
Lord and Sloop (2010)	One or more primary indicators of suicidal intent in incidents where the subject "attempts or completes suicide by inducing police officers to shoot them" (p. 892) based on Best et al.'s (2004) typology
McLeod et al. (2014)	All five of the following, based on Hutson et al. (1998): 1) communication of suicidal intent, 2) gestures of suicidal intent, 3) person stated he/she wanted police to shoot them, 4) possession/appearance of possession of a deadly weapon, and 5) evidence that subject deliberately escalated the encounter to provoke police lethal response
Mohandie and Meloy (2010)	"Subject engaged in actual or apparent risk to others with the intent to precipitate the use of deadly force by law enforcement personnel" (p. 105)
Mohandie and Meloy (2011)	"Subject engaged in actual or apparent risk to others with the intent to precipitate the use of deadly force by law enforcement personnel" (p. 665)
Mohandie et al. (2009)	"Subject engaged in actual or apparent risk to others with the intent to precipitate the use of deadly force by law enforcement personnel" (p. 457)
Wilson et al. (1998)	"A threat by the victim to kill the self, a request by the victim to be killed, an expressed desire to die, or the finding of some evidence of suicidal ideation or intent…that was temporally related to the fatal incident" (p. 47)

Appendix A: Determination of intent to die by SbC, study and author. (Source: Patton and Fremouw, 2016, p.114)

Appendix B

Author(s)	Sample size (# SbCs)	Geographic location	Origin of sample materials	Years included	Description of coding procedures	Variable(s) of interest
Best et al. (2004)	$n = 22$	England and Wales	All OIS investigated by the Police Complaints Authority	1998–2001	Absent; no information on coding procedures or IRR	Demonstration of intent to die by SbC
Dewey et al. (2013)	$n = 68$	United States; 55 jurisdictions and 26 states	Closed state and local cases of OIS	1979–2005	Three graduate students reviewed files, then presented them to a three-person panel, who designated the case as SbC; graduate students coded all other variables; kappa across these variables ranged from .63–1.0	Criminal and mental health history
Homant and Kennedy (2000)	$n = 143$	Uncertain	Cases taken from professional literature and newspaper accounts	Uncertain	Counseling student coded independently; ratings compared to the authors' rating of each case; 96.5% agreement for SbC designation	Demonstration of intent to die by SbC
Homant et al. (2000)	$n = 123$	United States and Canada	Media accounts of SbC cases, legal records, database search, cases described by previous researchers	Uncertain; collected from sources dated 1990–1998	Independent coding but not clear by whom; no description of IRR	Weapon
Hutson et al. (1998)	$n = 46$	Los Angeles, CA	All officer-involved shootings investigated by Los Angeles County Sheriff's Department Homicide Bureau	1987–1997	All files independently coded by four trained individuals; three independent reviewers; no information provided on IRR	Gender
Kennedy et al. (1998)	$n = 37$	18 metropolitan areas in the United States	Newspaper articles about police shootings	1980–1995	Two independent raters; 74% agreement on all variables but no discussion of reasons why disagreement occurred	Age
Kesic et al. (2012)	$n = 15$	Victoria, Australia	All police shooting fatalities investigated by coroners	1980–2007	The first author coded all variables using database materials; the second author coded SbC intent variable only. Blinding process not used. Agreement reached on all cases.	Demonstration of intent to die by SbC
Lord (2000)	$n = 64$	32 law enforcement agencies across North Carolina	Any cases meeting the researcher's definition of SbC	1991–1998	Police officers were told to select cases that met study's definition of SbC; no other description of coding or IRR	Criminal and mental health history
Lord (2001)	$n = 64$	32 law enforcement agencies across North Carolina	Any cases meeting the researcher's definition of SbC	1991–1998	Police officers were told to select cases that met study's definition of SbC; no other description of coding or IRR	Intervention impact on outcome
Lord (2012)	$n = 293$	United States; 17 states participating in NVDRS data collection	All violent deaths due to legal intervention	2003–2008	Absent; no description of coding procedures or IRR	Race/ethnicity, marital status
Lord (2014)	$n = 262$	United States; 17 states participating in NVDRS data collection	All violent deaths due to legal intervention	2004–2008	Independent coding by author and criminal justice practitioner; 92.4% rater agreement on subject and officer actions during SbC incident	Level and type of force used
Lord and Gigante (2004)	$n = 8$	"Large southeastern city" in United States	All H&B incidents	1998–2001	Absent; no description of coding procedures or IRR	Precipitating events
Lord and Sloop (2010)	$n = 47$	All states participating in HOBAS data collection	All H&B, suicide, kidnapping, and attempted suicide incidents where special response teams were deployed	2003–2007	Two independent raters; comparison after procedure showed 100% agreement on four variables and 91.5% agreement on two others	Subject intoxication and substance use
McLeod et al. (2014)	$n = 15$	Victoria, Australia	All police shooting fatalities investigated by coroners; sample as Kesic et al. (2012)	1980–2008	Absent; no description of coding procedures or IRR	Criminal and mental health history
Mohandie and Meloy (2010)	$n = 55$	United States and Canada	All H&B SbCs in sample of OIS investigated by participating police/law enforcement agencies	1998–2006	Blind and independent review and coding by both authors; IRR for overall variables = .88, ICC for SbC designation = .93	Level and type of force used
Mohandie and Meloy (2011)	$n = 21$	United States and Canada	All female SbCs in sample of OIS investigated by participating police/law enforcement agencies	1998–2006	Blind and independent review and coding by both authors; IRR for overall variables = .88, ICC for SbC designation = .93	Gender
Mohandie et al. (2009)	$n = 256$	United States and Canada	All SbCs in sample of OIS investigated by participating police/law enforcement agencies	1998–2006	Blind and independent review and coding by two authors; IRR for overall variables = .88, ICC for SbC designation = .93	Duration and location
Wilson et al. (1998)	$n = 15$	Portland, OR and Dade County, FL	Medical examiner records of suicidal individuals who provoked lethal police response	1969–1993 (FL); 1963–1995 (OR)	Death scene data, victim statements, mental health documentation, toxicology and autopsy reports, newspaper accounts, police reports	Ethnicity

Note: SbC = suicide by cop; OIS = officer-involved shootings; H&B = hostage/barricaded subject incidents; IRR = inter-rater reliability; ICC = intra-class correlation coefficient.

Appendix B: Study characteristics of SbC concepts. (Source: Patton and Fremouw, 2016, p.110)

Appendix C

1	IncidentDate	51	SingleCrewed	101	CED Fired	151	CED2 Front 5	250	CED4 Back K
2	IncidentTime	52	TrainedCED	102	CED Fired 5 Secs Cycle Interrupted	152	CED2 Front 6	251	Firearms Aimed
3	Incident Location: Street/Highway	53	CarryingCED	103	CED Fired Repeat Cycle Same Cartridge	153	CED2 Front 7	252	Firearms Fired
4	Incident Location: Public Transport	54	Tactic 1	104	CED Fired Total Number Of Cycles	154	CED2 Front 8	253	SubjectAge
5	Incident Location: Retail Premises	55	Coding Tactic 1	105	CED Fired Cycle Extended Beyond 5 Secs	155	CED2 Front 9	254	SubjectGender
6	Incident Location: Open ground (e.g. park, car park, field)	56	Effective 1	106	CED Fired Miss With One Probe	156	CED2 Front 10	255	SubjectEthnicity
7	Incident Location: Licensed Premises	57	Tactic 2	107	CED Fired Miss With Both Probes	157	CED2 Front 11	256	Coding- SubjectEthnicity
8	Incident Location: Sports or Event Stadia	58	Coding Tactic 2	108	CED Front 1	158	CED2 Front 12	257	PhysicalDisability
9	Incident Location: Hospital/A&E (2n-mental-health setting)	59	Effective 2	109	CED Front 2	159	CED2 Front 13	258	MentalDisability
10	Incident Location: Mental Health Setting	60	Tactic 3	110	CED Front 3	160	CED2 Front 14	259	StaffInjured
11	Incident Location: Police vehicle with prisoner handling cage	61	Coding Tactic 3	111	CED Front 4	161	CED2 Front 15	260	StaffInjuryIntentional
12	Incident Location: Police vehicle without prisoner handling cage	62	Effective 3	112	CED Front 5	162	CED2 Back A	261	StaffInjuryLevel
13	Incident Location: Dwelling	63	Tactic 4	113	CED Front 6	163	CED2 Back B	262	StaffMedProvided
14	Incident Location: Police station (excluding custody block)	64	Coding Tactic 4	114	CED Front 7	164	CED2 Back C	263	SubjectInjured
15	Incident Location: Custody Block	65	Effective 4	115	CED Front 8	165	CED2 Back D	264	SubjectNatureOfInjury
16	Incident Location: Ambulance	66	Tactic 5	116	CED Front 9	166	CED2 Back E	265	SubjectMedOffered
17	Incident Location: Other	67	Coding Tactic5	117	CED Front 10	167	CED2 Back F	266	SubjectMedProvided
18	Borough	68	Effective 5	118	CED Front 11	168	CED2 Back G	267	Outcome: Made off/escaped
19	Coding -Borough	69	Tactic 6	119	CED Front 12	169	CED2 Back H	268	Outcome: Arrested
20	PrimaryConduct	70	Coding Tactic 6	120	CED Front 13	170	CED2 Back J	269	Outcome: Hospitalised
21	Coding - PrimaryConduct	71	Effective 6	121	CED Front 14	171	CED2 Back K	270	Outcome: Detained - Mental Health Act
22	AssaultedBySubject	72	Tactic 7	122	CED Front 15	172	CED3 Drawn	271	Outcome: Fatality
23	ThreatenedWithWeapon	73	Coding Tactic 7	123	CED Back A	173	CED3 Aimed	272	Outcome: Other
24	Coding- ThreatenedWithWeapon	74	Effective 7	124	CED Back B	174	CED3 ArCED3		
25	AssaultedWithWeapon	75	Tactic 8	125	CED Back C	175	CED3 Red-Dotted		
26	Coding- AssaultedWithWeapon	76	Coding Tactic 8	126	CED Back D	176	CED3 Drive Stun		
27	Impact Factor: Possesion of a weapon	77	Effective 8	127	CED Back E	177	CED3 Drive Stun Repeat Application		
28	Impact Factor: Alcohol	78	Tactic 9	128	CED Back F	178	CED3 Angle Drive Stun		
29	Impact Factor: Drugs	79	Coding Tactic 9	129	CED Back G	179	CED3 Fired		
30	Impact Factor: Mental Health	80	Effective 9	130	CED Back H	180	CED3 Fired Cartridge Number		
31	Impact Factor: Prior K2wledge	81	Tactic 10	131	CED Back J	181	CED3 Fired 5 Secs Cycle Interrupted		
32	Impact Factor: Size/Gender/Build	82	Coding Tactic 10	132	CED Back K	182	CED3 Fired Repeat Cycle Same Cartridge		
33	Impact Factor: Acute Behavioural Disorder	83	Effective 10	133	CED2 Drawn	183	CED3 Fired Total Number Of Cycles		
34	Impact Factor: Crowd	84	Tactic 11	134	CED2 Aimed	184	CED3 Fired Cycle Extended Beyond 5 Secs		
35	Impact Factor: Other	85	Coding Tactic 11	135	CED2 ArCED2	185	CED3 Fired Miss With One Probe		
36	Reason for Force: Protect self	86	Effective 11	136	CED2 Red-Dotted	186	CED3 Fired Miss With Both Probes		
37	Reason for Force: Protect Public	87	Tactic 12	137	CED2 Drive Stun	187	CED3 Front 1		
38	Reason for Force: Protect Subject	88	Coding Tactic 12	138	CED2 Drive Stun Repeat Application	188	CED3 Front 2		
39	Reason for Force: Protect Other Officers	89	Effective 12	139	CED2 Angle Drive Stun	189	CED3 Front 3		
40	Reason for Force: Prevent Offence	90	Tactic 13	140	CED2 Fired	190	CED3 Front 4		
41	Reason for Force: Secure Evidence	91	Coding Tactic 13	141	CED2 Fired 5 Secs Cycle Interrupted	191	CED3 Front 5		
42	Reason for Force: Effect Search	92	Effective 13	142	CED2 Fired Repeat Cycle Same Cartridge	192	CED3 Front 6		
43	Reason for Force: Effect Arrest	93	CED Used	143	CED2 Fired Total Number Of Cycles	193	CED3 Front 7		
44	Reason for Force: Method of Entry	94	CED Drawn	144	CED2 Fired Cycle Extended Beyond 5 Secs	194	CED3 Front 8		
45	Reason for Force: Remove Handcuffs	95	CED Aimed	145	CED2 Fired Miss With One Probe	195	CED3 Front 9		
46	Reason for Force: Prevent Harm	96	CED Arced	146	CED2 Fired Miss With Both Probes	196	CED3 Front 10		
47	Reason for Force: Prevent Escape	97	CED Red-Dotted	147	CED2 Front 1	197	CED3 Front 11		
48	Reason for Force: Other	98	CED Drive Stun	148	CED2 Front 2	198	CED3 Front 12		
49	MainDuty	99	CED Drive Stun Repeat Application	149	CED2 Front 3	199	CED3 Front 13		
50	Coded- MainDuty	100	CED Angle Drive Stun	150	CED2 Front 4	200	CED3 Front 14		

Appendix C - MPS Use of Force dataset - recorded variables. (Source: MPS, 2019).

Appendix D - Survey SPSS coding book (1/5).

Questions.

Variable Information				
Variable	Position	Label	Measurement Level	Role
Q1	1	Q1- URN	Nominal	Input
Q2	2	Deciding whether to participate – Approval from both the MPS and CCCU Ethics boards has been granted to conduct this research. If you have any questions or concerns about the nature, procedures or requirements for participation do not hesitate to contact	Ordinal	Input
Q3_1	3	ARV Course	Ordinal	Input
Q3_2	4	ARV Refresher Training	Ordinal	Input
Q3_3	5	AFO Course	Ordinal	Input
Q3_4	6	AFO Refresher Training	Ordinal	Input
Q3_5	7	Medic Training	Ordinal	Input
Q3_6	8	TASER Course	Ordinal	Input
Q3_7	9	TASER Refresher Training	Ordinal	Input
Q4_Rank	10	Q4 Rank- summary	Ordinal	Input
Q4_1	11	Rank? - PC	Ordinal	Input
Q4_2	12	Rank? - Sgt	Ordinal	Input
Q4_3	13	Rank? - Insp	Ordinal	Input
Q5_Role	14	Q5 Primary Role- summary	Ordinal	Input
Q5_1	15	Primary Role - BCU	Ordinal	Input
Q5_2	16	Primary Role - BCU-Taser	Ordinal	Input
Q5_3	17	Primary Role - TSG-Taser	Ordinal	Input
Q5_9	18	Primary Role - Other	Ordinal	Input
Q5_NonAFO	19	Q5 Unarmed - Non AFO summary	Ordinal	Input
Q5_AFO	20	Q5 Authorised Firearms Officers -AFO summary	Ordinal	Input
Q5_4	21	Primary Role - TSGAFO	Ordinal	Input
Q5_5	22	Primary Role - AFO	Ordinal	Input
Q5_6	23	Primary Role - ARV	Ordinal	Input
Q5_7	24	Primary Role - CTSFO	Ordinal	Input
Q5_8	25	Primary Role - Firearms Instructor	Ordinal	Input
Q5_CRole	26	Q5_a Firearms Command Role- summary	Ordinal	Input
Q5_a_1	27	Firearms Command role? - OFC	Ordinal	Input
Q5_a_2	28	Firearms Command role? - TFC	Ordinal	Input
Q5_a_3	29	Firearms Command role? - SFC	Ordinal	Input
Q5_a_4	30	Firearms Command role? - FTA	Ordinal	Input
Q5_a_5	31	Firearms Command role? - N/A	Ordinal	Input
Q6_1	32	Current OCU: - Barking and Dagenham 1	Ordinal	Input
Q6_2	33	Current OCU: - Barnet 2	Ordinal	Input
Q6_3	34	Current OCU: - Bexley 3	Ordinal	Input
Q6_4	35	Current OCU: - Brent 4	Ordinal	Input
Q6_5	36	Current OCU: - Bromley 5	Ordinal	Input
Q6_6	37	Current OCU: - Camden 6	Ordinal	Input
Q6_7	38	Current OCU: - City of Westminster 7	Ordinal	Input
Q6_8	39	Current OCU: - Croydon 8	Ordinal	Input
Q6_9	40	Current OCU: - Ealing 9	Ordinal	Input
Q6_10	41	Current OCU: - Enfield 10	Ordinal	Input
Q6_11	42	Current OCU: - Greenwich 11	Ordinal	Input
Q6_12	43	Current OCU: - Hackney 12	Ordinal	Input
Q6_13	44	Current OCU: - Hammersmith and Fulham 13	Ordinal	Input
Q6_14	45	Current OCU: - Haringey 14	Ordinal	Input
Q6_15	46	Current OCU: - Harrow 15	Ordinal	Input
Q6_16	47	Current OCU: - Havering 16	Ordinal	Input
Q6_17	48	Current OCU: - Hillingdon 17	Ordinal	Input
Q6_18	49	Current OCU: - Hounslow 18	Ordinal	Input
Q6_19	50	Current OCU: - Islington 19	Ordinal	Input
Q6_20	51	Current OCU: - Kensington and Chelsea 20	Ordinal	Input
Q6_21	52	Current OCU: - Kingston upon Thames 21	Ordinal	Input
Q6_22	53	Current OCU: - Lambeth 22	Ordinal	Input
Q6_23	54	Current OCU: - Lewisham 23	Ordinal	Input
Q6_24	55	Current OCU: - Merton 24	Ordinal	Input
Q6_25	56	Current OCU: - Newham 25	Ordinal	Input
Q6_26	57	Current OCU: - Out of Force 26	Ordinal	Input
Q6_27	58	Current OCU: - Redbridge 27	Ordinal	Input
Q6_28	59	Current OCU: - Richmond upon Thames 28	Ordinal	Input
Q6_29	60	Current OCU: - Southwark 29	Ordinal	Input
Q6_30	61	Current OCU: - Sutton 30	Ordinal	Input
Q6_31	62	Current OCU: - Tower Hamlets 31	Ordinal	Input
Q6_32	63	Current OCU: - Waltham Forest 32	Ordinal	Input
Q6_33	64	Current OCU: - Wandsworth 33	Ordinal	Input
Q6_34	65	Current OCU: - SCO19 34	Ordinal	Input
Q6_35	66	Current OCU: - PaDP 35	Ordinal	Input
Q6_36	67	Current OCU: - RaSP 36	Ordinal	Input
Q6_37	68	Current OCU: - AP 37	Ordinal	Input
Q6_38	69	Current OCU: - NOT RECORDED 99	Ordinal	Input

Appendix D - Survey SPSS coding book (2/5).

Questions.

Variable Information				
Variable	Position	Label	Measurement Level	Role
Q7_1	70	Operational? - Yes	Ordinal	Input
Q7_2	71	Operational? - No	Ordinal	Input
Q8_Age	72	Q8 Age- summary	Ordinal	Input
Q8_1	73	Age - 18-24	Ordinal	Input
Q8_2	74	Age - 25-34	Ordinal	Input
Q8_3	75	Age - 35-44	Ordinal	Input
Q8_4	76	Age - 45-54	Ordinal	Input
Q8_5	77	Age - 55-64	Ordinal	Input
Q9_Gender	78	Q9 Gender- summary	Ordinal	Input
Q9_1	79	Gender - Male	Ordinal	Input
Q9_2	80	Gender - Female	Ordinal	Input
Q9_3	81	Gender - TransGender	Ordinal	Input
Q9_4	82	Gender - Other	Ordinal	Input
Q9_5	83	Gender - Prefer not to say	Ordinal	Input
Q10	84	Length of Police Service: (Yrs)	Scale	Input
Q11	85	Length of service in current role: (Yrs).	Scale	Input
Q12_Ethnicity	86	Q12 How would you describe your ethnic group? - summary	Ordinal	Input
Q12_1	87	How would you describe your ethnic group? - White	Ordinal	Input
Q12_2	88	How would you describe your ethnic group? - Black/Black British	Ordinal	Input
Q12_3	89	How would you describe your ethnic group? - Asian/Asian British	Ordinal	Input
Q12_4	90	How would you describe your ethnic group? - Mixed	Ordinal	Input
Q12_5	91	How would you describe your ethnic group? - Chinese	Ordinal	Input
Q13_Ethnicityx	92	Q13 How would you describe your ethnic group? - Detailed summary	Ordinal	Input
Q13_1	93	How would you describe your ethnic group? - White British	Ordinal	Input
Q13_2	94	How would you describe your ethnic group? - White Irish	Ordinal	Input
Q13_3	95	How would you describe your ethnic group? - Any other white background	Ordinal	Input
Q13_4	96	How would you describe your ethnic group? - African	Ordinal	Input
Q13_5	97	How would you describe your ethnic group? - Caribbean	Ordinal	Input
Q13_6	98	How would you describe your ethnic group? - Any otherBlack background	Ordinal	Input
Q13_7	99	How would you describe your ethnic group? - Indian	Ordinal	Input
Q13_8	100	How would you describe your ethnic group? - Pakistani	Ordinal	Input
Q13_9	101	How would you describe your ethnic group? - Bangladeshi	Ordinal	Input
Q13_10	102	How would you describe your ethnic group? - Any other Asian background	Ordinal	Input
Q13_11	103	How would you describe your ethnic group? - White & Asian	Ordinal	Input
Q13_12	104	How would you describe your ethnic group? - White & Black African	Ordinal	Input
Q13_13	105	How would you describe your ethnic group? - Any other mixed background	Ordinal	Input
Q13_14	106	How would you describe your ethnic group? - White and Black Caribbean	Ordinal	Input
Q13_15	107	How would you describe your ethnic group? - Chinese	Ordinal	Input
Q14_1	108	Preventing Crime	Ordinal	Input
Q14_2	109	Helping Vulnerable People	Ordinal	Input
Q14_3	110	Searching Suspects	Ordinal	Input
Q14_4	111	Detecting Crime	Ordinal	Input
Q14_5	112	Traffic related	Ordinal	Input
Q14_6	113	Public Order	Ordinal	Input
Q14_7	114	Mental Heath	Ordinal	Input
Q14_8	115	Reporting Crime	Ordinal	Input
Q14_9	116	Investigating Crime	Ordinal	Input
Q14_10	117	Firearms Crime - involving the illegal use or possession of	Ordinal	Input
Q14_11	118	Violent crime	Ordinal	Input
Q14_12	119	Arresting Suspects	Ordinal	Input
Q14_13	120	Community Engagement	Ordinal	Input
Q15_1	121	Public service i.e. making a difference	Ordinal	Input
Q15_2	122	Recognition from peers or managers	Ordinal	Input
Q15_3	123	Learning or career development	Ordinal	Input
Q15_4	124	Appreciation from public or victims	Ordinal	Input
Q15_5	125	Excitement or Enjoyment	Ordinal	Input
Q15_6	126	Public expectation	Ordinal	Input
Q15_7	127	Personal pride	Ordinal	Input
Q15_8	128	Personal challenge	Ordinal	Input
Q15_9	129	Other please specify _____	Ordinal	Input
Q16_1	130	Person alone shouting	Ordinal	Input
Q16_2	131	Known person with mental health issues, alone shouting	Ordinal	Input
Q16_3	132	Person shouting at another person	Ordinal	Input
Q16_4	133	Known person with mental health issues shouting at another individual	Ordinal	Input
Q16_5	134	Person pushing another person in the chest	Ordinal	Input
Q16_6	135	Known person with mental health issues pushing another individual in the chest	Ordinal	Input
Q16_7	136	Person armed with a weapon (not firearm) walking	Ordinal	Input
Q16_8	137	Known person with mental health issues armed with a weapon (not firearm) walking	Ordinal	Input
Q16_9	138	Person armed with a weapon (not firearm) shouting and aggressive towards another	Ordinal	Input
Q16_10	139	Known person with mental health issues armed with a weapon (not firearm) shouting and aggressive towards another	Ordinal	Input
Q16_11	140	Person armed with a weapon (firearm) shouting and aggressive towards another	Ordinal	Input
Q16_12	141	Known person with mental health issues armed with a weapon (firearm) shouting and aggressive towards another	Ordinal	Input

Appendix D - Survey SPSS coding book (3/5).

Questions.

Variable Information				
Variable	Position	Label	Measurement Level	Role
Q17_1	142	Training (classroom based)	Ordinal	Input
Q17_2	143	Training (practical based)	Ordinal	Input
Q17_3	144	Observation of colleagues	Ordinal	Input
Q17_4	145	Working with colleagues	Ordinal	Input
Q17_5	146	Prior police experience	Ordinal	Input
Q17_6	147	Other experience(s)	Ordinal	Input
Q18_1	148	Training (classroom based)	Ordinal	Input
Q18_2	149	Training (practical based)	Ordinal	Input
Q18_3	150	Experience when observing colleagues	Ordinal	Input
Q18_4	151	Experience working with colleagues	Ordinal	Input
Q18_5	152	Practical policing experience	Ordinal	Input
Q18_6	153	Your own personal abilities	Ordinal	Input
Q18_7	154	Your own personal life experience	Ordinal	Input
Q19_1 to Q19_13	155	Please think about an encounter, where a range of conflict resolution tactics were used. (This can be either your own or an encounter you have observed). What type of incident was this? - Preventing Crime	Ordinal	Input
Q19_a_1	168	Communication to de-escalate	Ordinal	Input
Q19_a_2	169	Time or space to de-escalate	Ordinal	Input
Q19_a_3	170	OST 'Open handed techniques'	Ordinal	Input
Q19_a_4	171	Restraint (physical, cuffs or spit-hood)	Ordinal	Input
Q19_a_5	172	ASP	Ordinal	Input
Q19_a_6	173	CS Spray	Ordinal	Input
Q19_a_7	174	Conductive electronic devices (CED or Taser)	Ordinal	Input
Q19_a_8	175	AEP Baton Gun rounds	Ordinal	Input
Q19_a_9	176	Firearms	Ordinal	Input
Q19_a_10	177	Other	Ordinal	Input
Q20_1 to Q20_13	178	Thinking about an encounter, where you witnessed ineffective conflict resolution tactics used. (This can be either your own or an encounter you have observed). What type of incident was this? - Preventing Crime	Ordinal	Input
Q20_a_1	191	Communication to de-escalate	Ordinal	Input
Q20_a_2	192	Time or space to de-escalate	Ordinal	Input
Q20_a_3	193	OST 'Open handed techniques'	Ordinal	Input
Q20_a_4	194	Restraint (physical, cuffs or spit-hood)	Ordinal	Input
Q20_a_5	195	ASP	Ordinal	Input
Q20_a_6	196	CS Spray	Ordinal	Input
Q20_a_7	197	Conductive electronic devices (CED or Taser)	Ordinal	Input
Q20_a_8	198	AEP Baton Gun rounds	Ordinal	Input
Q20_a_9	199	Firearms	Ordinal	Input
Q20_a_10	200	Other	Ordinal	Input
Q21_1	201	Use of time to de-escalate	Ordinal	Input
Q21_2	202	Establish rapport	Ordinal	Input
Q21_3	203	Use of effective communication	Ordinal	Input
Q21_4	204	Temperament – calm and composed character	Ordinal	Input
Q21_5	205	Knowledge – situational and within own role	Ordinal	Input
Q21_6	206	Experience - learning from previous encounters to de-escalate	Ordinal	Input
Q21_7	207	Force - Use or threat of to resolve the incident	Ordinal	Input
Q21_8	208	Character– imposing authoritative personality as a police officer	Ordinal	Input
Q22_1_1 to Q25_g_1_9	209 to 2080	1 - 'Communication'	Ordinal	Input
Q22_1_2	210	1 - 'Time or space to de-escalate'	Ordinal	Input
Q22_1_3	211	1 - 'OST techniques'	Ordinal	Input
Q22_1_4	212	1 - 'Physical Restraint '	Ordinal	Input
Q22_1_5	213	1 - 'ASP'	Ordinal	Input
Q22_1_6	214	1 - 'CS Spray'	Ordinal	Input
Q22_1_7	215	1 - 'Taser'	Ordinal	Input
Q22_1_8	216	1 - 'AEP Baton Gun rounds'	Ordinal	Input
Q22_1_9	217	1 - 'Firearms'	Ordinal	Input
Q26_1	2081	Q26_1 How does your current training adequately prepare you to fulfil the requirements of your role?	Ordinal	Input
Q26_1_a_1	2082	How does your current training adequately prepare you to fulfil the requirements of your role? - 1 'Poor'	Ordinal	Input
Q26_1_a_2	2083	How does your current training adequately prepare you to fulfil the requirements of your role? - 2 'Fair'	Ordinal	Input
Q26_1_a_3	2084	How does your current training adequately prepare you to fulfil the requirements of your role? - 3 'Average'	Ordinal	Input
Q26_1_a_4	2085	How does your current training adequately prepare you to fulfil the requirements of your role? - 4 'Good'	Ordinal	Input
Q26_1_a_5	2086	How does your current training adequately prepare you to fulfil the requirements of your role? - 5 'Excellent'	Ordinal	Input
Q26_2	2087	Q26_2 How does your current training adequately prepare you to deal with individuals in mental crisis?	Ordinal	Input
Q26_2_a_1	2088	How does your current training adequately prepare you to deal with individuals in mental crisis? - 1 'Poor'	Ordinal	Input
Q26_2_a_2	2089	How does your current training adequately prepare you to deal with individuals in mental crisis? - 2 'Fair'	Ordinal	Input
Q26_2_a_3	2090	How does your current training adequately prepare you to deal with individuals in mental crisis? - 3 'Average'	Ordinal	Input
Q26_2_a_4	2091	How does your current training adequately prepare you to deal with individuals in mental crisis? - 4 'Good'	Ordinal	Input
Q26_2_a_5	2092	How does your current training adequately prepare you to deal with individuals in mental crisis? - 5 'Excellent'	Ordinal	Input
Q26_3	2093	Q26_3 How does your current equipment adequately prepare you to fulfil the requirements of your role?	Ordinal	Input
Q26_3_a_1	2094	How does your current equipment adequately prepare you to fulfil the requirements of your role? - 1 'Poor'	Ordinal	Input
Q26_3_a_2	2095	How does your current equipment adequately prepare you to fulfil the requirements of your role? - 2 'Fair'	Ordinal	Input
Q26_3_a_3	2096	How does your current equipment adequately prepare you to fulfil the requirements of your role? - 3 'Average'	Ordinal	Input
Q26_3_a_4	2097	How does your current equipment adequately prepare you to fulfil the requirements of your role? - 4 'Good'	Ordinal	Input
Q26_3_a_5	2098	How does your current equipment adequately prepare you to fulfil the requirements of your role? - 5 'Excellent'	Ordinal	Input
Q26_4	2099	Q26_4 How does your current equipment adequately prepare you to deal with individuals in mental crisis?	Ordinal	Input
Q26_4_a_1	2100	How does your current equipment adequately prepare you to deal with individuals in mental crisis? - 1 'Poor'	Ordinal	Input
Q26_4_a_2	2101	How does your current equipment adequately prepare you to deal with individuals in mental crisis? - 2 'Fair'	Ordinal	Input
Q26_4_a_3	2102	How does your current equipment adequately prepare you to deal with individuals in mental crisis? - 3 'Average'	Ordinal	Input
Q26_4_a_4	2103	How does your current equipment adequately prepare you to deal with individuals in mental crisis? - 4 'Good'	Ordinal	Input
Q26_4_a_5	2104	How does your current equipment adequately prepare you to deal with individuals in mental crisis? - 5 'Excellent'	Ordinal	Input

Appendix D - Survey SPSS coding book (4/5). Coded Responses.

Variable Values

Value		Label
Q2	1	Yes
Q3_1	1	ARV Course
Q3_2	1	ARV Refresher Training
Q3_3	1	AFO Course
Q3_4	1	AFO Refresher Training
Q3_5	1	Medic Training
Q3_6	1	TASER Course
Q3_7	1	TASER Refresher Training
Q4_Rank	1	Constable
	2	Sergeant
	3	Inspector
	99a	Not entered
Q4_1	1	PC
Q4_2	1	Sgt
Q4_3	1	Insp
Q5_Role	1	BCU
	2	BCU TASER
	3	TSG-TASER
	4	TSG AFO
	5	AFO
	6	ARV
	7	CTSFO
	8	Firearms Instructor
	9	Other
	99a	Not applicable
Q5_1	1	BCU
Q5_2	1	BCU-Taser
	99	NA
Q5_3	1	TSG-Taser
	99	NA
Q5_9	1	Other
	99	NA
Q5_NonAFO	1	BCU
	2	BCU-Taser
	3	TSG TASER
	4	Other
	99	Not applicable
Q5_AFO	1	TSG AFO
	2	AFO
	3	ARV
	4	CTSFO
	5	Firearms Instructor
	99	Not applicable
Q5_4	1	TSGAFO
	99	NA
Q5_5	1	AFO
	99	NA
Q5_6	1	ARV
	99	NA
Q5_7	1	CTSFO
	99	NA
Q5_8	1	Firearms Instructor
	99	NA

Value		Label
Q5_CRole	1	OFC
	2	TFC
	3	SFC
	4	FTA
	5	N/A
	99a	Not entered
Q5_a_1	1	OFC
Q5_a_2	1	TFC
Q5_a_3	1	SFC
Q5_a_4	1	FTA
Q5_a_5	1	N/A
Q6_1	1	Barking and Dagenham 1
Q6_2	1	Barnet 2
Q6_3	1	Bexley 3
Q6_4	1	Brent 4
Q6_5	1	Bromley 5
Q6_6	1	Camden 6
Q6_7	1	City of Westminster 7
Q6_8	1	Croydon 8
Q6_9	1	Ealing 9
Q6_10	1	Enfield 10
Q6_11	1	Greenwich 11
Q6_12	1	Hackney 12
Q6_13	1	Hammersmith and Fulham 13
Q6_14	1	Haringey 14
Q6_15	1	Harrow 15
Q6_16	1	Havering 16
Q6_17	1	Hillingdon 17
Q6_18	1	Hounslow 18
Q6_19	1	Islington 19
Q6_20	1	Kensington and Chelsea 20
Q6_21	1	Kingston upon Thames 21
Q6_22	1	Lambeth 22
Q6_23	1	Lewisham 23
Q6_24	1	Merton 24
Q6_25	1	Newham 25
Q6_26	1	Out of Force 26
Q6_27	1	Redbridge 27
Q6_28	1	Richmond upon Thames 28
Q6_29	1	Southwark 29
Q6_30	1	Sutton 30
Q6_31	1	Tower Hamlets 31
Q6_32	1	Waltham Forest 32
Q6_33	1	Wandsworth 33
Q6_34	1	SCO19 34
Q6_35	1	PaDP 35
Q6_36	1	RaSP 36
Q6_37	1	AP 37
Q6_38	1	NOT RECORDED 99
Q7_1	1	Yes
Q7_2	1	No

Value		Label
Q8_Age	1	18-24
	2	25-34
	3	35-44
	4	45-54
	5	55-64
Q8_1	1	18-24
Q8_2	1	25-34
Q8_3	1	35-44
Q8_4	1	45-54
Q8_5	1	55-64
Q9_Gender	1	Male
	2	Female
	3	TransGender
	4	Other
	5	Prefer not to say
	99a	Not entered
Q9_1	1	Male
Q9_2	1	Female
Q9_3	1	TransGender
Q9_4	1	Other
Q9_5	1	Prefer not to say
Q12_Ethnicity	1	White
	2	Black/Black British
	3	Asian/Asian British
	4	Mixed
	5	Chinese
	99a	Not entered
Q12_1	1	White
Q12_2	1	Black/Black British
Q12_3	1	Asian/Asian British
Q12_4	1	Mixed
Q12_5	1	Chinese
Q13_Ethnicityx	1	White British
	2	White Irish
	3	Any other white background
	4	African
	5	Caribbean
	6	Any otherBlack background
	7	Indian
	8	Pakistani
	9	Bangladeshi
	10	Any other Asian background
	11	White & Asian
	12	White & Black African
	13	Any other mixed background
	14	White and Black Caribbean
	15	Chinese
	99a	Not entered

Appendix D - Survey SPSS coding book (5/5).

Coded Responses.

Variable Values

Value		Label
Q13_1	1	11White British
Q13_2	1	12White Irish
Q13_3	1	13Any other white background
Q13_4	1	21African
Q13_5	1	22Caribbean
Q13_6	1	23Any otherBlack background
Q13_7	1	31Indian
Q13_8	1	32Pakistani
Q13_9	1	33Bangladeshi
Q13_10	1	34Any other Asian background
Q13_11	1	41White & Asian
Q13_12	1	42White & Black African
Q13_13	1	43Any other mixed background
Q13_14	1	44White and Black Caribbean
Q13_15	1	51Chinese
Q14_1 to Q14_13	1	1 'Very dissatisfied'
	2	2 'Somewhat dissatisfied'
	3	3 'Neither satisfied nor dissatisfied'
	4	4 'Somewhat satisfied'
	5	5 'Very satisfied'
Q15_1 to Q15_9	1	1 'Strongly disagree'
	2	2 'Disagree'
	3	3 'Neither agree nor disagree'
	4	4 'Agree'
	5	5 'Strongly agree'
Q16_1 to Q16_12	1	1 'Never'
	2	2 'Seldom'
	3	3 'About half the time'
	4	4 'Usually'
	5	5 'Always'

Value		Label
Q17_1 to Q17_6	1	1 'Poor'
	2	2 'Fair'
	3	3 'Average'
	4	4 'Good'
	5	5 'Excellent'
Q18_1 to Q18_7	1	1 'Not much'
	2	2 'Little'
	3	3 'Somewhat'
	4	4 'Much'
	5	5 'A great deal'
Q19_1	1	Preventing Crime
Q19_2	1	Helping Vulnerable Person
Q19_3	1	Searching Suspect(s)
Q19_4	1	Detecting Crime
Q19_5	1	Traffic related
Q19_6	1	Public Order
Q19_7	1	Mental Heath
Q19_8	1	Reporting Crime
Q19_9	1	Investigating Crime
Q19_10	1	Firearms crime
Q19_11	1	Violent crime
Q19_12	1	Arresting Suspects
Q19_13	1	Other
Q19_a_1 to Q19_a_10	1	1 'Very Ineffective'
	2	2 'Rarely Effective'
	3	3 'Sometimes Effective'
	4	4 'Often Effective'
	5	5 'Very Effective'
	6	99 'Not Applicable'
Q20_1	1	Preventing Crime
Q20_2	1	Helping Vulnerable Person
Q20_3	1	Searching Suspect(s)
Q20_4	1	Detecting Crime
Q20_5	1	Traffic related
Q20_6	1	Public Order
Q20_7	1	Mental Heath
Q20_8	1	Reporting Crime
Q20_9	1	Investigating Crime
Q20_10	1	Firearms crime
Q20_11	1	Violent crime
Q20_12	1	Arresting Suspects
Q20_13	1	Other
Q20_a_1 to Q20_a_10	1	1
	2	2
	3	3
	4	4
	5	5
	6	6
	7	7
	8	8
	9	9
	10	10
	11	N/A

Value		Label
Q21_1 to Q21_8	1	1 'Poor'
	2	2 'Fair'
	3	3 'Average'
	4	4 'Good'
	5	5 'Excellent'
Q25_g_1_9		
Q22_1_1 to Q22_1_1	1	'Communication'
Q22_1_2	1	'Time or space to de-escalate'
Q22_1_3	1	'OST techniques'
Q22_1_4	1	'Physical Restraint '
Q22_1_5	1	'ASP'
Q22_1_6	1	'CS Spray'
Q22_1_7	1	'Taser'
Q22_1_8	1	'AEP Baton Gun rounds'
Q22_1_9	1	'Firearms'
Q26_1	1	Poor
	2	Fair
	3	Average
	4	Good
	5	Excellent
	99a	Not Entered
Q26_1_a_1 to Q26_4_a_5	1	1 'Poor'
Q26_1_a_2	1	2 'Fair'
Q26_1_a_3	1	3 'Average'
Q26_1_a_4	1	4 'Good'
Q26_1_a_5	1	5 'Excellent'
Q26_2	1	Poor
	2	Fair
	3	Average
	4	Good
	5	Excellent

Appendix E - Research Survey

PARTICIPANT INFORMATION SHEET

Research Survey:

"How does being an AFO, compared with unarmed policing, affect decision making?"

A research study is being conducted at Canterbury Christ Church University (CCCU) by Nick Francis an operational MPS police officer.

Background

I am conducting research to deepen our understanding of how police officers spontaneously respond to incidents where individuals may have immediate access to lethal weapons with intent to harm themselves or induce officers to do it for them. The focus will be on how a mainly unarmed police service in England & Wales deals with these instances. Specifically, if firearms officers are subsequently called forward, how they respond (tactics, training, command structure) and make decisions to resolve the incident to maintain the safety of the public, police and individuals.

What will you be required to do? - Participants in this study will be required to take part in a short questionnaire, which take approximately 15-20 minutes to complete.

To participate in this research you must:

- ☐ Be over 18 years.
- ☐ Be English speaking.
- ☐ Be an operational police officer.

Confidentiality - All responses will be treated as confidential. All data and personal information will be stored securely within CCCU premises in accordance with the Data Protection Act 1998 and the University's own data protection requirements. The procedures adopted will meet the EU General Data Protection Regulation (GDPR). Only the named researcher can access data. After completion of the study, all data will be made anonymous (i.e. all personal information associated with the questionnaire data will be removed), and records will be stored for a maximum of five years. Please note that we will not be asking you to disclose any sensitive information, however should any such disclosures occur during this process, which indicate safeguarding risks or criminal behaviour, we may not be able to maintain strict confidentiality.

Dissemination of results - The results of the study will be shared via a written thesis and possibly as a journal article. Anonymity of participants will be maintained at all times, including in the dissertation and in any subsequent articles. Please advise me whether you would like to receive a copy of this once complete.

Deciding whether to participate – Approval from both the MPS and CCCU Ethics boards has been granted to conduct this research. If you have any questions or concerns about the nature, procedures or requirements for participation do not hesitate to contact any of the researcher team via the details below. Following completion, if you wish to withdraw please contact the researcher with your URN to have any contributing data removed from this research. Please tick to confirm you are satisfied for this data to be used in a confidential and anonymous manner. ☐

Any questions? - Please contact the named lead researcher below.

Lead Researcher: **Nick Francis** n.j.francis107@canterbury.ac.uk 07887824639

Appendix E - Research Survey

Demographic Data

3. Course attending :	**1. Unique Reference Number** *(assigned by researcher)* **/ /2019**
4. Rank / Firearms Command role *(tick as appropriate)*	**5. Primary Role** *(tick as appropriate)*
○ PC ○ Sgt ○ Insp ○ OFC ○ TFC ○ SFC ○ FTA	○ BCU-Taser ○ TSG-Taser ○ TSGAFO ○ AFO ○ ARV ○ CTSFO ○ Firearms Instructor ○ Other _____
6. Current OCU:	**7. Operational? Y / N**
8. Age *(tick as appropriate)*	**9. Gender** *(tick as appropriate)*
○ 18-24 ○ 25-34 ○ 35-44 ○ 45-54 ○ 55-64	○ Male ○ Female ○ TransGender ○ Other *Please Specify* _____ ○ Prefer not to say
10. Length of Police Service: *(Yrs)*_____	**11. Length of service in current role:** *(Yrs).*_____

12. How would you describe your ethnic group? *Please Tick box*				
White	White British		White Irish	
	Any other white background			
Black/Black British	African		Caribbean	
	Any other background			
Asian/Asian British	Indian		Pakistani	
	Bangladeshi		Any other Asian background	
Mixed	White & Asian		White & Black African	
	Any other mixed background		White and Black Caribbean	
Chinese	Chinese			
Other Ethnic Group - *Please Specify* _____				

2. Please tick to confirm you are satisfied for this data to be used in a confidential and anonymous manner. ☐

Appendix E - Research Survey

Please consider the following questions against your current role and the level of training you have received.

14. Using the scale 1 to 5 please rate the following incidents for the satisfaction they usually give you as a police officer.

(1= Little or no satisfaction 5= Very satisfied)

Preventing Crime	1 2 3 4 5
Helping Vulnerable People	1 2 3 4 5
Searching Suspects	1 2 3 4 5
Detecting Crime	1 2 3 4 5
Traffic related	1 2 3 4 5
Public Order	1 2 3 4 5
Mental Heath	1 2 3 4 5
Reporting Crime	1 2 3 4 5
Investigating Crime	1 2 3 4 5
Firearms Crime - involving the illegal use or possession of	1 2 3 4 5
Violent crime	1 2 3 4 5
Arresting Suspects	1 2 3 4 5
Community Engagement	1 2 3 4 5

15. In general terms, as a police officer what it is about these incidents that makes something satisfying when undertaking that role?

(1= Strongly disagree 5= Strongly agree)

Public service *i.e. making a difference*	1 2 3 4 5
Recognition from peers or managers	1 2 3 4 5
Learning or career development	1 2 3 4 5
Appreciation from public or victims	1 2 3 4 5
Excitement or Enjoyment	1 2 3 4 5
Public expectation	1 2 3 4 5
Personal pride	1 2 3 4 5
Personal challenge	1 2 3 4 5
Other *please specify* _____	1 2 3 4 5

Appendix E - Research Survey

16. Imagine that you are on patrol, either on foot or in a vehicle, when you see an individual who is acting in the following manner.

Whilst you would normally have access to further information or intelligence, how likely would the following events to cause you to stop and intervene?

(1=Never 5=Always)

Person alone shouting	1 2 3 4 5
Known person with mental health issues, alone shouting	1 2 3 4 5
Person shouting at another person	1 2 3 4 5
Known person with mental health issues shouting at another individual	1 2 3 4 5
Person pushing another person in the chest	1 2 3 4 5
Known person with mental health issues pushing another individual in the chest	1 2 3 4 5
Person armed with a weapon (not firearm) walking	1 2 3 4 5
Known person with mental health issues armed with a weapon (not firearm) walking	1 2 3 4 5
Person armed with a weapon (not firearm) shouting and aggressive towards another	1 2 3 4 5
Known person with mental health issues armed with a weapon (not firearm) shouting and aggressive towards another	1 2 3 4 5
Person armed with a weapon (firearm) shouting and aggressive towards another	1 2 3 4 5
Known person with mental health issues armed with a weapon (firearm) shouting and aggressive towards another	1 2 3 4 5

17. How did you initially learn to resolve conflict when dealing with members of the public?

Considering the following options, how <u>effective</u> were they in developing your ability to resolve conflict?

(1= Poor 5= Excellent)

Training (classroom based)	1 2 3 4 5
Training (practical based)	1 2 3 4 5
Observation of colleagues	1 2 3 4 5
Working with colleagues	1 2 3 4 5
Prior police experience	1 2 3 4 5
Other experience(s) *please specify*_____	1 2 3 4 5

18. How did the following experiences **contribute** to your <u>ability</u> in resolving conflict?

(1= Not at all 5= Very Much)

Training (classroom based)	1 2 3 4 5
Training (practical based)	1 2 3 4 5
Experience when observing colleagues	1 2 3 4 5
Experience working with colleagues	1 2 3 4 5
Practical policing experience	1 2 3 4 5
Your own personal abilities	1 2 3 4 5
Your own personal life experience	1 2 3 4 5

Appendix E - Research Survey

19. Please think about an encounter, where a range of conflict resolution tactics were used. *(This can be either your own or an encounter you have observed).*

What type of incident was this?

(Tick most applicable box)

Preventing Crime	
Helping Vulnerable Person	
Searching Suspect(s)	
Detecting Crime	
Traffic related	
Public Order	
Mental Heath	
Reporting Crime	
Investigating Crime	
Firearms crime	
Violent crime	
Arresting Suspects	
Other *please specify* _____	

How effective were the following tactics?

(1= Very Ineffective 5= Very Effective)

Communication to de-escalate	1 2 3 4 5 n/a
Time or space to de-escalate	1 2 3 4 5 n/a
OST 'Open handed techniques'	1 2 3 4 5 n/a
Restraint (physical, cuffs or spit-hood)	1 2 3 4 5 n/a
ASP	1 2 3 4 5 n/a
CS Spray	1 2 3 4 5 n/a
Conductive electronic devices (CED or Taser)	1 2 3 4 5 n/a
AEP Baton Gun rounds	1 2 3 4 5 n/a
Firearms	1 2 3 4 5 n/a
Other *please specify* _____	1 2 3 4 5 n/a

Appendix E - Research Survey

20. Thinking about an encounter, where you witnessed <u>ineffective</u> conflict resolution tactics used.
(This can be either your own or an encounter you have observed).

What type of incident was this?
(Tick most applicable box)

Preventing Crime	
Helping Vulnerable Person	
Searching Suspect(s)	
Detecting Crime	
Traffic related	
Public Order	
Mental Heath	
Reporting Crime	
Investigating Crime	
Firearms crime	
Violent crime	
Arresting Suspects	
Other *please specify* _____	

Which of the following tactics were used? *(Place in the order of use within the encounter. Please use n/a if not used or not applicable)*

(1= First tactic, 2= second etc.)

Communication to de-escalate	
Time or space to de-escalate	
OST 'Open handed techniques'	
Restraint (physical, cuffs or spit-hood)	
ASP	
CS Spray	
Conductive electronic devices (CED or Taser)	
AEP Baton Gun rounds	
Firearms	
Other *please specify* _____	

21. There are occasions where police officers deal with incidents where someone is either confrontational or tries to intimidate others.

What do you think is the best way to deal with them?

(1= Worst 5= Best)

Use of time to de-escalate	1 2 3 4 5
Establish rapport	1 2 3 4 5
Use of effective communication	1 2 3 4 5
Temperament – calm and composed character	1 2 3 4 5
Knowledge – situational and within own role	1 2 3 4 5
Experience - learning from previous encounters to de-escalate	1 2 3 4 5
Force - Use or threat of to resolve the incident	1 2 3 4 5
Character– imposing authoritative personality as a police officer	1 2 3 4 5

Appendix E - Research Survey

22. The next few questions ask you to consider a number of situations relating to suspects or victims; and then the options that you would immediately use or deliberately not use to resolve it.

22. What tactics or options would you **IMMEDIATELY consider** using? *(1= first, 2= second or 3= third etc. n/a= not used/applicable)*	Communication	Give Time or space	OST techniques	Physical Restraint	ASP	CS Spray	Taser	AEP Baton Gun rounds	Firearms
For a Suicidal or Self Harm suspect									
A Suspect presenting threat of violence towards another									
For an Emotionally or Mentally Disturbed suspect									
A Suicidal or Self Harm suspect armed with a weapon (not firearm)									
For a Suspect presenting threat of violence towards another armed with a weapon (not firearm)									
An Emotionally or Mentally Disturbed suspect armed with a weapon (not firearm)									
For an Emotionally or Mentally Disturbed suspect armed with a weapon (firearm) presenting threat of violence towards another									
For a Suicidal or Self Harm suspect armed with a weapon (firearm) presenting threat of violence towards another									

23. What tactics or options would you **IMMEDIATELY consider** using? *(1= first, 2= second or 3= third etc. n/a= not used/applicable)*	Communication	Give Time or space	OST techniques	Physical Restraint	ASP	CS Spray	Taser	AEP Baton Gun rounds	Firearms
For a Suicidal or Self Harm Victim									
A Victim presenting threat of violence towards another									
For an Emotionally or Mentally Disturbed Victim									
A Suicidal or Self Harm Victim armed with a weapon (not firearm)									
For a Victim presenting threat of violence towards another armed with a weapon (not firearm)									
An Emotionally or Mentally Disturbed Victim armed with a weapon (not firearm)									
For an Emotionally or Mentally Disturbed Victim armed with a weapon (firearm) presenting threat of violence towards another									
Suicidal or Self Harm Victim armed with a weapon (firearm) presenting threat of violence towards another									

Appendix E - Research Survey

24. What tactics or options would you **NOT** consider using? *(Tick= not used/not applicable)*	Communication	Give Time or space	OST techniques	Physical Restraint	ASP	CS Spray	Taser	AEP Baton Gun rounds	Firearms
For a Suicidal or Self Harm suspect									
A Suspect presenting threat of violence towards another									
For an Emotionally or Mentally Disturbed suspect									
A Suicidal or Self Harm suspect armed with a weapon (not firearm)									
For a Suspect presenting threat of violence towards another armed with a weapon (not firearm)									
An Emotionally or Mentally Disturbed suspect armed with a weapon (not firearm)									
For an Emotionally or Mentally Disturbed suspect armed with a weapon (firearm) presenting threat of violence towards another									
For a Suicidal or Self Harm suspect armed with a weapon (firearm) presenting threat of violence towards another									

25. What tactics or options would you **NOT** consider using? *(Tick= not used/not applicable)*	Communication	Give Time or space	OST techniques	Physical Restraint	ASP	CS Spray	Taser	AEP Baton Gun rounds	Firearms
For a Suicidal or Self Harm Victim									
A Victim presenting threat of violence towards another									
For an Emotionally or Mentally Disturbed Victim									
A Suicidal or Self Harm Victim armed with a weapon (not firearm)									
For a Victim presenting threat of violence towards another armed with a weapon (not firearm)									
An Emotionally or Mentally Disturbed Victim armed with a weapon (not firearm)									
For an Emotionally or Mentally Disturbed Victim armed with a weapon (firearm) presenting threat of violence towards another									
Suicidal or Self Harm Victim armed with a weapon (firearm) presenting threat of violence towards another									

Appendix E - Research Survey

26. The next few questions would like to examine your current training and issued equipment.

26a. How does your **current training** adequately prepare you to fulfil the requirements of your role?

(1= Unsatisfactory 5= Excellent)

1	2	3	4	5

Please explain your answer (*it might be interesting to know either way*)?

_____

_____

26b. How does your **current training** adequately prepare you to deal with individuals in *mental crisis*?

(1= Unsatisfactory 5= Excellent)

1	2	3	4	5

Please explain your answer. What could be changed or improved?

_____

_____

26c. How does your **current equipment** adequately prepare you to fulfil the requirements of your role?

(1= Unsatisfactory 5= Excellent)

1	2	3	4	5

Please explain your answer.

_____

_____

26d. How does your **current equipment** adequately prepare you to deal with individuals in *mental crisis*?

(1= Unsatisfactory 5= Excellent)

1	2	3	4	5

Please explain your answer. What could be changed or improved?

_____

_____

Thank you for your time and help - but most of all your patience in completing this survey.

If there are any questions about this research I would be happy to answer them. Thanks once again.

Kind Regards
Nick Francis n.j.francis107@canterbury.ac.uk 07887 824639

(Adapted from Hendy, 2018)

Appendix F – Ethics submission, amendments and approval

For Research Office Use ONLY:
Checklist No:
Date Received:

PROPORTIONATE ETHICAL REVIEW FORM

ETHICS REVIEW CHECKLIST

Your application **must** comprise the following four documents (please tick the boxes below to indicate that each section is complete):

Ethics Review Checklist	☐
Consent Material(s)	☐
Participant Information Material(s)	☐
Risk Assessment Form **(NB. This MUST be signed by your Head of Department/School)**	☐

Please attach copies of any documents to be used in the study: (NB: These must be attached where they form part of your methodology)

Relevant permission letter(s)/email(s)	☐
Questionnaire	☐
Introductory letter(s)	☐
Data Collection Instruments	☐
Interview Questions	☐
Focus Group Guidelines	☐

Other (please give details):

Forms submitted to the Metropolitan Police Service (MPS) :-

1. Information Sharing Agreement
2. Research protocol Document.
3. Initial email authorisation from T/Cmdr Rob Atkin & Ch Supt Andy Walker (CO19 Force Firearms Unit, MPS) granting permission to access data.

Ethics Rev Checklist V13_July_18

ETHICS REVIEW CHECKLIST – PROPORTIONATE ETHICAL REVIEW

Sections A and B of this form **must** be completed for **every** research or knowledge exchange project that involves human or animal[1] participants, or the processing of data not in the public domain. These sections serve as a toolkit that will identify whether a full application for ethics approval needs to be submitted.

If the toolkit shows that there is **no need for a full ethical review**, Sections D, E and F should be completed in full and the checklist emailed to red.resgov@canterbury.ac.uk as described in Section C.

If the toolkit shows that **a full application is required**, this checklist should be set aside and an **Application for Faculty Research Ethics Panel Approval Form** – or an appropriate external application form – should be completed and submitted. **There is no need to complete both documents.**

IMPORTANT

Before completing this form, please refer to Ethics Policy for Research Involving Human Participants and the Code of Practice for the Use of Sentient Animals in Research and Teaching on the University Research website.

Please note that it is your responsibility in the conduct of your study to follow the policies and procedures set out in the University's Research Ethics website, and any relevant academic or professional guidelines. This includes providing appropriate information sheets and consent Materials, and ensuring confidentiality in the storage and use of data. Any significant change in the question, design or conduct over the course of the study should be notified to the **Faculty and/or other Research Ethics Panel** that received your original proposal. Depending on the nature of the changes, a new application for ethics approval may be required.

The principal researcher/project leader (or, where the principal researcher/project leader is a student, their supervisor) is responsible for exercising appropriate professional judgement in this review.

N.B. This checklist must be completed, reviewed, any actions taken and approved before potential participants are approached to take part in any research project.

Type of Project – please tick as appropriate			
Research	✓	Knowledge Exchange	☐

Section A: Applicant Details

A1. Name of applicant:	Nick Francis	
A2. Status (please tick):	Postgraduate Student ✓	Staff Member ☐
A3. Faculty/Department & School	Law, Criminal Justice & Computing	
A4. Email address:	n.j.francis107@canterbury.ac.uk	
A5. Contact address:	Home - 3, Kingwoodland Orchard, Cackle Street, Brede, East Sussex. TN31 6EN	
A6. Telephone number	07980 402794	

[1]Sentient animals, generally all vertebrates and certain invertebrates such as cephalopods and crustaceans

Section B: Ethics Checklist

Please answer each question by choosing 'YES' or 'NO' in the appropriate box. Consider each response carefully:

		Yes	No
1	Does the study involve participants who are particularly vulnerable or unable to give informed consent, or in unequal relationships? (N.B. The list of vulnerable groups is extensive, please consider the answer to this question carefully. If your own staff or students are participants within your research the answer to this question is 'Yes')	☐	☐
2	Will the study require the co-operation of a gatekeeper for initial access to any vulnerable groups or individuals to be recruited?	☐	☐
3	Will it be necessary for participants to take part in the study without usual informed consent procedures having been implemented in advance? (including but not restricted to; covert observation, certain ethnographic studies, involve the capturing of data from social media sources)	☐	☐
4	Will the study use deliberate deception? (N.B. This does not include randomly assigning participants to groups in an experimental design)	☐	☐
5	Will the study involve discussion of, or collection of information on, topics of a sensitive nature personal to the participants? (including but not restricted to sexual activity, drug use)	☐	☐
6	Are drugs, placebos or other substances (including but not restricted to food substances, vitamins) to be administered to human or animal participants?	☐	☐
7	Does the study involve invasive or intrusive procedures such as blood taking or muscle biopsy from human or animal participants?	☐	☐
8	Is physiological stress, pain, or more than mild physical discomfort to humans or animals, beyond the risks encountered in normal, life likely to result from the study?	☐	☐
9	Could the study induce psychological stress or anxiety or cause harm or negative consequences in humans (including the researcher) or animals beyond the risks encountered in normal life?	☐	☐
10	Will the study involve interaction with animals? (N.B. If you are simply observing them – e.g. in a zoo or in their natural habitat – without having any contact at all, you can answer "No")	☐	☐
11	Will the study involve prolonged or repetitive testing?	☐	☐
12	Will financial inducements (other than reasonable expenses and compensation for time) be offered to participants?	☐	☐
13	Is the study a survey or activity that involves University-wide recruitment or a representative sample of students from Canterbury Christ Church University? (N.B. The Student Survey Unit and the Student Communications Unit should be notified of plans for any extensive student surveys (i.e. research with 100 CCCU students or more))	☐	☐

14	Will the study involve participants who may lack capacity to consent or are at risk of losing capacity to consent as defined by the Mental Capacity Act 2005?	☐	✓
15	Will the study involve recruitment of participants (excluding staff) through the NHS?	☐	✓
16	Will the study involve participants (Children or Adults) who are currently users of social services including those in care settings who are funded by social services or staff of social services departments?		✓

NEXT: Please assess outcomes and actions by referring to Section C ➲

Section C: How to Proceed

Responses to Section B	Next steps
C1. 'NO' to all questions in Section B	□ Complete Sections D-F of this form, including attachments as appropriate, and email it to red.resgov@canterbury.ac.uk. □ Once your application is assessed, and any follow up action taken, if it is given approval you will receive a letter confirming compliance with University Research Governance procedures. **No research can be undertaken until this letter is issued**. □ **Master's students** should retain copies of the form and letter; the letter should be bound into their research report or dissertation. Work that is submitted without this document will be returned un-assessed.
C2. If you have answered **'YES'** to **any** of the questions in Section B, you will need to describe more fully how you plan to deal with the ethical issues raised by your project. This does not mean that you cannot do the study, only that your proposal will need to be approved by a Research Ethics Panel. **Depending upon which questions you answered 'YES' to, you should proceed as below:**	
a) '**YES**' to any of **questions 1 – 12 ONLY** (i.e. not questions 13,14 or 15)	□ **DO NOT complete this form**. □ Submit an application to your Faculty Ethics Panel (FEP) using your Faculty's version of the **Application for Faculty Research Ethics Panel Approval Form**. This should be submitted to your faculty as directed on the form.
b) '**YES**' to **question 13**	□ You have two options: (i) If you answered '**YES**' to **question 13 ONLY** you must send copies of this form (including attachments) to the **Student Survey Unit** and the **Student Communications Unit**. Subject to their agreement you may then proceed as at C1 above. (ii) If you answered '**YES**' to **question 13 PLUS any other of questions 1 – 12**, you must proceed as at C2(b)(i) above and then submit an application to your Faculty Ethics Panel (FEP) as at C2(a).
c) '**YES**' to **questions 14 and 15**	□ You **DO NOT** need to submit an application to your Faculty Ethics Panel (FEP). □ **INSTEAD**, Please use the HRA decision making tool and proceed according to the instructions given. □ Applications must be signed by the relevant faculty Director of Research or other nominated signatory prior to submission. □ A satisfactory peer review must be completed. □ Once approval is given, you must send a copy to the relevant FEP.
d) **'Yes' to**	□ If your study involves users of social services or social services staff you

question 16	may need to undertake different processes: - If your study involves carers of people receiving NHS care or treatment please follow the HRA decision making tool and process outlined in c) above - If your study involves local social services staff or service users who are children or adults you should complete an application for full internal approval and also contact the relevant Research and Governance manager of the local authority or authorities involved for management approval to attach to your application. - If your study involves more than three local authority children's social services sites you will need to apply to the Association of Directors of Children's Social Services for approval - If your study involves four or more adult social services sites you will need to apply to the Association of Directors of Adult Social Service for approval.

Section D: Project Details

D1. Project title:	"How does being an Authorised Firearms Officer (AFO), compared with unarmed police officer, affect decision making?" (Working title)
D2. Start date of fieldwork	As soon as authority is granted.
D3. End date of fieldwork	30/06/2019
D4. Project summary (This should be written in plain English avoiding overly academic language and acronyms)	*Include information for each of these questions:* • *What is the purpose of your project?* • *Briefly explain your methodology in lay terms i.e. What are you doing and how are you doing it?* • *Who are the participants?* • *What will the participants be expected to do?* • *How will the participants be recruited?* • *What are the intended outcomes of your research?* I am conducting research to deepen our understanding of how police officers spontaneously respond to incidents where individuals may have immediate access to lethal weapons with intent to harm themselves or induce officers to do it for them. This will focus on how a primarily unarmed police service in England &Wales deals with these instances. Specifically, if firearms officers are subsequently called forward, how they respond (within tactics, training, command structure) and make decisions to resolve the incident to maintain the safety of the public, police and individual. The focus will be on practitioners in roles which encounter and handle incidents relating to the use of force upon vulnerable persons; whether individual firearms officers themselves, the tactical advisors or those who carry responsibility for commanding the operational deployment of firearms officers. These practitioners will be limited to police officers only. The aim of this research is to increase accountability and confidence in the police service in protecting vulnerable people. The MPS and other UK police services need to manage threats to public safety. Persons experiencing a mental health crisis can present a significant operational challenge to responding police officers; the magnitude of which significantly increases when the distressed individuals have a capability to cause injury with a weapon. The limited nature of 'Suicide by Cop' (SbC) research has meant that during my BSc (Hons) with CCCU I was able to analyse the majority of internationally peer reviewed SbC literature, where I identified significant academic knowledge gaps. A significant proportion of the literature identified was either descriptive or USA based, creating an additional challenge in order to bring a UK context to this phenomenon.

	The 'learning by mistakes' approach currently utilised within the UK is reliant upon reactive post incident reviews, indicating a lack of SbC evidence based research. Although the SbC phenomenon is recognised by academics and police, it is not fully understood, placing responders in an almost impossible position with a limited range of tactical options. The aim is to identify evidence of best practise which may be practically applied to response policing and safeguard vulnerable persons. It will aim to:- • Examine UK police shootings against established SbC criteria to identify individual vulnerabilities/key risks within UK based context; critically analysing policing from both a unarmed/ armed perspective. • Examine police use of force on mentally ill subjects, to increase understanding of the key risks and when shots are likely to be fired. • Use quantifiable data from potentially fatal occurrences to measure 'near miss' incidents and identify the impact or ability of the police to 'restrain' the use of force • Explore the unarmed policing paradigm; as unarmed officers have to adapt and utilise different methods to engage a potentially dangerous suspect. This research aims to utilise data from publically available sources (Coroners' reports, Independent Office for Police Conduct (IOPC) investigations, 'Use of Force' databases and media reports) and from 'closed' data sources held by the MPS. As a serving police officer within the MPS, a senior officer (Commander Atkin (Armed Policing)) has given initial agreement to permit access to all 'Use of Force', TASER and police shooting reports (internal and IOPC). I am in discussion with two other 'similar' forces to identify whether they may permit such access. I aim to review this to develop theory from data using a Grounded Theory qualitative method. It aims to analyse interactions between unarmed/ armed police to understand how police interact and deal with an individual who is intent on self harm. There will be a mixed methods approach to this research, comprising of:- • **Case/data analysis**: This research aims to utilise data from publically available sources (Coroners' reports, Independent Office for Police Conduct (IOPC) investigations, 'Use of Force' databases and media reports) and from 'closed' data sources held by the MPS. As a serving police officer within the MPS, a senior officer has given initial agreement to permit access to all 'Use of Force', TASER and police shooting reports (internal and IOPC). I am in discussion with two other 'similar' forces to identify whether they may permit such access. • I aim to review this to develop theory from data using a Grounded Theory qualitative method. It aims to analyse interactions between unarmed/ armed police to understand how police interact and deal with an individual who is intent on self harm.

	• **Interviews**: The questions for the structured interviews will have to be determined by the results from the case/ data analysis. However, it will focus upon scenarios that officers may have encountered; so the themes will relate to threat/ risk faced, tactical options available, use of force, risk factors for officers & suspect, outcome and a reflection based upon their experience. Once I have examined and analysed quantitative data then semi-structured interviews will be conducted with individuals drawn from the practitioner groups, described above. Transcripts of interviews will be analysed using Nvivo software and a thematic analysis carried out. Lastly, participant understanding of the recommended procedures and policies will be critically examined. Data gained from the interviews will be securely recorded, transcribed, and coded accordingly for analysis. In addition a thorough literature review will be undertaken together with analysis of data publically available from the MPS and others. Data gained from the interviews with police officers will be securely recorded, transcribed, and coded accordingly for analysis. In addition a thorough literature review will be undertaken together with analysis of data publically available from the MPS and others. Once I have examined and analysed quantitative data then semi-structured interviews will be conducted with individuals drawn from the practitioner groups, described above. Transcripts of interviews will be analysed using Nvivo software and a thematic analysis carried out. Lastly, participant understanding of the recommended procedures and policies will be critically examined.

Section E: Data protection

The General Data Protection Regulation (GDPR) applies to the processing of personal data across the EU. It builds on the Data Protection Act (DPA) 1998, which has been replaced by the DPA 2018. The GDPR introduces stringent requirements for protecting data and much greater accountability. It gives individuals more control over their personal data.

E1. Personal data	Will Personal Identifiable Information (also defined as personal data) be collected and/or processed? **YES – Processed data** If you are in doubt, please refer to the guidance – General Data Protection Regulation (GDPR))
	• If you answered 'YES' to the question above please complete the rest of this section providing as much detail as possible using the guidance questions. This should be written in plain English avoiding overly academic language and acronyms. It must contain as much information as possible on how your research will comply with the GDPR. • If you answered 'NO' to the question above and having read the guidance are sure that no personal data will be collected or processed please move on to section F.
E2. Data collection	• What personal data will be collected? And what is the reason for this? **Please note –** **This is research and permission is subject to a specifically authorised Information Sharing Agreement/ Research protocol between the MPS and CCCU (attached within supporting files).** **This is data legally held by the MPS, who have granted me express permission to utilise it within this agreement for the purpose of this research study.** **The data will be accessible and processed in the following manner:-** • **'Raw data' – The primary researcher will only have access to this in accordance with the agreed ISA with the Metropolitan Police Service. This will remain on MPS systems until sanitised, anonymised and redacted into 'Processed data'.** • **'Processed data' – Access will be available by the primary researcher to their supervisor and subsequently any assessors or examiners to view for scrutiny.** The data utilised will be from the MPS stored electronic records collated by CO19 Firearms Policy Unit relating to TASER, Baton Gun and Firearms discharges. These records will be viewed on a Metropolitan Police Service (MPS) issued laptop. The data will be processed with fields extracted onto an

	Excel sheet for empirical study. At this point all of the data will remain on an MPS system and as a serving police officer under my personal secure MPS account. No identifying personal data will be recorded onto the Excel sheet and only the internal CO19 reference will be retained to allow a more subsequent or detailed examination of the record if required. These electronic records and investigations relate to: • TASER reporting proforma's – completed each time an officer 'uses' TASER i.e. points, red dots or discharges. This would include justification for use of force, personal details (officer and suspect- see below) and demographic data. • Baton Gun discharge report. This would include justification for use of force, personal details (officer and suspect- see below) and demographic data. • Firearms discharges – conventional firearms discharges report. This would include justification for use of force, personal details (officer and suspect- see below) and demographic data. Until these records are viewed it is anticipated the fields from CO19 records will relate to (*not an exhaustive list*):- • Time • Location • Suspect demographics i.e. age, sex, ethnicity code, mental health history, injuries • Risk factors i.e. drink, drugs, violence, weaponry • Use of force justification free text box • Other tactical options considered/ utilised • Officer- numbers deployed, level of training, equipment available • Result i.e. arrest, s136 Mental Health referral etc. Please Note- Any personal identifying data such as names, dates of birth or home addresses will not be recorded or removed from any MPS system. Any data removed from any MPS system will be redacted in order to prevent any individual being identified. I cannot see any reason for this, but if there is a requirement to remove any non-redacted records this will be with express written authority of Ch. Supt CO19 and conducted within MPS guidelines. These data fields are required to permit a thematic analysis of this use of force data using Nvivo software. This Excel sheet will be transferred from the MPS system and stored in accordance with MPS guidelines utilising an MPS issued encrypted memory stick. • What is the lawful basis for the collection and processing of personal data? N.B This is likely to be consent but not in all cases! Please use the lawful basis tool produced by the ICO to determine, if you are in doubt: https://ico.org.uk/for-organisations/resources-and-support/getting-ready-for-the-gdpr-resources/lawful-basis-interactive-guidance-tool/ Section 4 of the research DSA explores the legality of the sharing activity, in compliance with Article 6 of the GDPR and the Data Protection Act. It details how the agreement will comply with the relevant legal and official authorities, when sharing personal and special

	category data with partner agencies. **4.1 First Principle** The first data protection principle states that data must be processed lawfully, fairly and in a transparent manner. **Common Law Powers** are applied where there is no statutory gateway, but the public interest in sharing the data outweighs Police's normal duty of confidentiality. As no statutory power exists here, Common Law may be applied for the purpose of this research. To share information under Common Law, the research must be in connection with a **Policing Purpose**, namely: ○ Protecting life and property; ○ Preserving order; ○ Preventing the commission of offences; ○ Bringing offenders to justice; ○ Any duty or responsibility of the police arising from, common or statute law. **STATE how the information to be shared in this ISA meets the criteria of the Common Law power.** • *Protect life*- The primary aim of this research is to identify if armed police officers could utilise other methods when dealing or resolving incidents those in mental health crisis and prevent a fatal shooting. • *Any duty or responsibility of the police arising from, common or statute law*- The police service has a responsibility under Art 2 ECHR to preserve life. This is an absolute right and every effort must be made to prevent the loss of life. The research of this subject area is predominantly USA based and therefore lacks the context within UK policing. It is therefore proportionate and reasonable to expect the UK police service to conduct research to prevent loss of life. **4.2 Human Rights Act 1998, Article 8: The Right to Respect for Private and Family Life, Home and Correspondence** There shall be no interference by a public authority with the exercise of this right except such as is in accordance with the law and is necessary in a democratic society in the interests of national security, public safety or the economic well-being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others. Despite there being an established legal gateway and a general public

	interest to share police information, you **must** also ensure that an individual's right to privacy is not infringed by the data sharing. **STATE how this agreement meets the criteria of Article 8 of the Human Rights Act** The aim of this research is to increase legitimacy, accountability and confidence in the police service to protect vulnerable people. The MPS and other UK police services need to manage threats to public safety. Persons experiencing a mental health crisis can present a significant operational challenge to responding police officers; the magnitude of which significantly increases when the distressed individuals have a capability to cause injury with a weapon. The 'learning by mistakes' approach currently utilised within the UK is reliant upon reactive post incident reviews, indicating a lack of SbC evidence based research. Although the SbC phenomenon is recognised by academics and police, it is not fully understood, placing responders in an almost impossible position with a limited range of tactical options. This research aims to utilise data already held by the MPS to identify evidence of best practise which may be practically applied to response policing and safeguard vulnerable persons. It will aim to:- • Examine UK police shootings against established SbC criteria to identify individual vulnerabilities/key risks within UK based context; critically analysing policing from both a unarmed/ armed perspective. • Examine police use of force on mentally ill subjects, to increase understanding of the key risks and when shots are likely to be fired. • Use quantifiable data from potentially fatal occurrences to measure 'near miss' incidents and identify the impact or ability of the police to 'restrain' the use of force • Explore the unarmed policing paradigm; as unarmed officers have to adapt and utilise different methods to engage a potentially dangerous suspect. As stated these records will be viewed on an MPS issued laptop and fields extracted onto an Excel sheet for empirical study. At this point all of the data will remain on an MPS system and as a serving officer under my personal secure MPS account. No identifying personal data will be recorded onto the Excel sheet and only the internal CO19 reference will be retained to allow a more detailed examination of the record if required. It is anticipated the fields from CO19 records will relate to (*not an exhaustive list*):- Time Location

	☐ Suspect demographics i.e. age, sex, ethnicity code, mental health history, injuries ☐ Risk factors i.e. drink, drugs, violence, weaponry ☐ Use of force justification free text box ☐ Other tactical options considered/ utilised ☐ Officer- numbers deployed, level of training, equipment available ☐ Result i.e. arrest, s136 Mental Health referral etc. ☐ This is in pursuit of a legitimate aim e.g. to protect vulnerable persons – under statutory duty within law. ☐ It is Proportionate as this data is already held by the MPS and the redacted use of personal data eliminates any intrusion or identification. This therefore minimises the risk of damage or distress into a person's private lifes. ☐ It is Appropriate and necessary in a democratic society – as there is no other UK based studies into this type of phenomenon and this may influence public health or police response.
E3. Subject access requests	☐ What arrangements in place related to any actions required to respond to individual requests for access to their personal data (Subject Access Requests)? i.e. How are you ensuring that personal data can be quickly and easily extracted from the system and/or redacted? This research is subject to a specific Information Sharing Agreement with the MPS. This is attached in supporting files but an extract is replicated below for clarity:- **4.9 Freedom of Information Act (FoIA) and Subject Access Requests (SAR)** **FOIA Requests**: Normal practice will be to make all ISAs externally available on the MPS Publication Scheme. It is recognised that parties to this agreement may receive a request for information made under the Act that relates to the operation of this agreement. Where applicable, all partners will observe the Code of Practice made under S.45 of the Freedom of Information Act 2000, relating to consultation with others who are likely to be affected by the disclosure (or non-disclosure) of the information requested. The Code also relates to the process by which one authority may also transfer all or part of a request to another authority if it relates to information held only by the other authority. **Subject Access Requests:** Individuals can request a copy of all the information an organisation holds on them, by making a Subject Access Request (SAR). This may include information that was disclosed to that organisation under this agreement. Where this is the case, as a matter of good practice, the organisation will liaise with the originating agency to ensure that the release of the information to the individual will not prejudice any ongoing investigation/proceedings. Partners will comply with subject access requests in compliance with the relevant legislation, and if it is to be answered jointly to inform the MPS as soon as possible

	on receipt in order to comply with the statutory time limit. □ If consent is your lawful basis, will participants be able to withdraw consent at any stage of the research? What is the process for this? What is the cut-off date for withdrawal? This data is already held by the MPS lawfully and as this will be redacted/ anonymised to enable processing into specific fields it is not believed that any consent is required.
E4. Data access & sharing	□ Who will have access to the personal data? Any third party involvement? For students this will include your supervisor and examiner as a minimum. This research is subject to a specific Information Sharing Agreement with the MPS. **The data will be accessible and processed in the following manner:-** □ **'Raw data' – The primary researcher will only have access to this in accordance with the agreed ISA with the Metropolitan Police Service. This will remain on MPS systems until sanitised, anonymised and redacted into 'Processed data'.** □ **'Processed data' – Access will be available by the primary researcher to their supervisor and subsequently any assessors or examiners to view for scrutiny.** This is attached in supporting files but an extract is replicated below for clarity:- **Sixth Principle** Personal data shall be processed in a manner that ensures the appropriate security of the personal data. This includes the protection against unauthorised or unlawful processing, accidental loss, destruction or damage, using appropriate technical or organisational measures." *Please state how this agreement complies with the sixth data protection principle.* □ Professor Robin Bryant (Canterbury Christ Church University) is my supervisor and he will receive the redacted version of an Excel sheet to allow my research to be examined. This does not have any personal identifying data on it only the fields as described above. This will be stored in electronic form within a password protected file on an MPS issued encrypted memory stick. This will be physically completed and not transferred via any non-secure email system. □ The transcribed data (i.e. redacted data stored on Excel sheet)

	and all other records pertaining to the study will be stored in on an encrypted database within Canterbury ChristChurch University, accessible only by the named researchers, with a copy stored on the external drive along with any audio files from the interviews. □ Please list and define the roles of any third party organisations (including software providers or partner organisations) with an involvement in the processing of the personal data. This research is subject to a specific Information Sharing Agreement with the MPS and this is attached in supporting files. □ Have you ensured that all third party involvement in the processing of data is covered by a Data Sharing Agreement (with a data controller) or a Data Processing Agreement (with a data Processor)? (Please refer to CCCU guidance for further information.)https://cccu.canterbury.ac.uk/governance-and-legal-services/the-general-data-protection-regulation/data-sharing.aspx YES □ Is this an international project? Will personal data be shared outside of the EEA? What safeguards are in place? NO
E5. Participant recruitment, privacy & confidentiality	□ Are you using social media to recruit participants? NO □ How have you ensured the security surrounding your use of personal data in social media activities? N/A □ How are you gaining consent? How are you informing participants of how their personal data will be used? This research is subject to a specific Information Sharing Agreement with the MPS. This is attached in supporting files but an extract is replicated below for clarity:- **4.8 Consent** Explicit consent will be sought from data subjects where it has been identified as necessary for the processing of personal data, as stipulated in the relevant Data Protection, GDPR, Law Enforcement Directive legislation, and policies of the partners of this agreement. Where consent is required, it is the responsibility of partner agencies to seek consent from data subjects. Individuals should be made aware of how their personal data will be processed, why and which agencies it will be shared with. They should be given the opportunity to opt into the given data share and informed that they may withdraw their consent at any time. In circumstances where consent has been refused or withdrawn by the

	data subject, that data will not be used unless withholding that information would risk causing harm or distress to any party. Given the nature of police information, there may be occasions where personal information may be legally shared with other agencies without consent. Please state if data subjects have been made aware of how their personal data will be processed as part of this agreement and if their explicit consent has been sought. - previously stated, this research is in the public interest to complete. The data already held by the MPS will be redacted to ensure that no personal information is removed or recorded within any of this research. Therefore only descriptive type data fields as described will be recorded for empirical analysis. This is working within Canterbury Christ Church code of ethics and any information will remain confidential and stored within the processes previously outlined above. - Are you undertaking any activities that could create privacy concerns for individuals due to personal intrusion? NO - How will this be mitigated and addressed? N/A - How will you ensure confidentiality? Please identify and list all the risks which could lead to a data breach. This research is subject to a specific Information Sharing Agreement with the MPS. This is attached in supporting files but an extract is replicated below for clarity:- **Confidentiality and Vetting** Where OFFICIAL SENSITIVE information is being shared; vetting for researchers may be required and access must always be limited on a strict "need-to-know" basis. In circumstances where there are national security implications, a Counter Terrorist Check [CTC] is required. Data requesters must confirm that shared MPS information will be accessed by those staff who have a need-to-know, and that they have provisions in place to ensure that unauthorised dissemination or copying by their staff does not occur. - *Detail if recipients of OFFICIAL SENSITIVE data have undergone any vetting.* Insp Nick Francis (researcher) CO19 Force Firearms Unit- SC/DV cleared - *Detail if any confidentiality agreements, or evidence of an equivalent level of assurance of confidentiality, are used or required by the partner employees who request the information.* None.

Physically

- ☐ *Information will be moved by a trusted person in a closed container or package.*
- ☐ *Information will be moved by post or courier in a sealed package with no protective markings showing (other than PERSONAL or PRIVATE). It will be addressed to a specified individual within the partner organisation by name or appointment (add job title).*

- ☐ Canterbury Christ Church University – Professor Robin Bryant is my supervisor and he will receive the redacted version of an Excel sheet to allow my work to be examined. This does not have any personal identifying data on it only the fields as described above. This will be stored in electronic form within a password protected file on an MPS issued encrypted memory stick.
- ☐ Information will be stored on removable media, this is issued by the MPS and will be encrypted to government standards.

Electronically

- ☐ Canterbury Christ Church University – Professor Robin Bryant is my supervisor and he will receive the redacted version of an Excel sheet to allow my work to be examined. This does not have any personal identifying data on it only the fields as described above. This will be stored in electronic form within a password protected file on an MPS issued encrypted memory stick. This will be physically completed and not transferred via any non-secure email system.
- ☐ The transcribed data (i.e. redacted data stored on Excel sheet) and all other records pertaining to the study will be stored in on an encrypted database within Canterbury ChristChurch University, accessible only by the named researchers, with a copy stored on the external drive along with any audio files from the interviews.

3.4 Data Storage

Partner's Building & Perimeter Security

Where OFFICIAL information is concerned, the information will be kept within a secure location with a managed and auditable access control system that the general public have no access to.

The guidance below relates to the storage of information classified as OFFICIAL SENSITIVE *by both physical and electronic means. Please detail which will be the primary method of storage, deleting any text which is not applicable to this agreement.* Not applicable.

Hard Copy

- *OFFICIAL MPS information will be stored in a locked container within a secure premise with a managed access control. Access to information will be limited to those with a genuine "need-to-know". When the documents are not being used they will be locked away.* Not applicable.

Electronically on a partner's system

- *Where information is being kept electronically, partners confirm that system access controls are in place (i.e. username & password / keeping permissions to a minimum) to those who have a genuine "need-to-know". It has been confirmed that access to the information can be audited.* The transcribed data (i.e. redacted data stored on Excel sheet) and all other records pertaining to the study will be stored in on an encrypted database within Canterbury ChristChurch University, accessible only by the named researchers, with a copy stored on the external drive along with any audio files from the interviews.

- *Is the partner organisation part of the UK Government 'Cyber Essentials' scheme?* ***Not known.***

3.5 Business Continuity

If the need arises for information shared within this agreement to be backed up either electronically or with the movement of physical files, then the responsible party must ensure that the appropriate storage and protection measures are in place.

Electronically

If information is backed up electronically via disc, hard drive, or any mobile device, then the appropriate level of encryption and or password requirements must be in place. This should be followed by the media used being stored in a physical location that has a level of security appropriate to the level that the information held is graded to.

Hard Copy

If information shared under this agreement must be moved from its usual secure location, which is in accordance with the level of security required by this agreement, then any move temporary or permanent must provide the same level of security in storage as originally agreed and stated in this document.

	Whilst partners to this agreement may have their own security standards & protocols, where MPS information is concerned the relevant security standards set out by the GSC for transmitting, storing and disposing information must be adhered to at all times. **3.6 Data destruction / disposal** The guidance below relates to the disposal of information up to OFFICIAL SENSITIVE, including papers and electronic information. *Please detail which will be the primary method of data disposal, and delete any text which is not applicable to this agreement.* **Hard Copy**. ☐ Papers will be returned to MPS premises for disposal. ***Of Electronic Information from Partner's System*** ☐ Electronic information held on a partner's system will be securely erased or overwritten using an approved software utility to a standard applicable to the protective marking. **3.7 Reporting Security Incidents and Breaches to the Agreement** **Partner Agency Responsibility** Security breaches, including misuse of MPS information must be reported to the MPS SPOC (job title) within 24 hours of occurring / being detected. *Detail the process by which this will occur; who is responsible for notification (job title) and by what means?* In the unlikely event of this occurring Insp Nick Francis CO19 will notify his line manager and the IAU. It is confirmed that security breaches, including misuse or unauthorised disclosure are covered by the partner's internal disciplinary procedures. If misuse is found there should be a mechanism to facilitate an investigation, including initiating criminal proceedings where necessary. **MPS Responsibility** The nominated MPS individual must **immediately** inform the Information Assurance Unit of any security incident or breach of this agreement, including unauthorised disclosure or loss of information, by emailing 'IAU Mailbox - Security Incidents'.

3.8 Compliance

All partners are responsible for ensuring the security controls are implemented and staff are aware of their responsibilities under the Data Protection Act 2018.

Partners agree where necessary to allow peer-to-peer reviews to ensure compliance with the security section of this DSA. Compliance with these security controls will be catered for in the periodic reviews of the DSA.

3.9 Review

- In accordance with the Guidance on the Management of Police Information (MoPI) this research ISA will be reviewed six months after implementation and annually thereafter.
- Have you consulted with the IT department in order to verify if they can offer a valid solution?
  NO. This is MPS data lawfully gathered and stored by the police service. It is subject to an Information Sharing agreement with the MPS.
- If stored external to CCCU systems, how are you ensuring that personal data is safely stored, processed and disposed of securely when no longer needed?
  How long will personal data be kept/stored for? In what format will this be?

  Any paper records (unlikely to generate any) will be kept by the lead researcher in a secure lockable file. All documents and data will be kept for no longer than 5 years once study has been completed, as per University guidelines. No personal data is collated only processed as described above.

Section F1: For Students Only

F1. Module name and number:	
F2. Course:	
F3. Name of Supervisor(s) or module Leader:	
F4. Email address of Supervisor(s) or Module leader:	

Section F2: For Supervisors

Please ensure that this form has been completed correctly and in full. It will delay the ethical approval process if the form is incorrect, incomplete or has not been proofread.

Please tick the appropriate boxes below. This application should not be submitted until all boxes are ticked:

The student has read the relevant documentation relating to the University's Research Governance, available on the University web pages at: https://cccu.canterbury.ac.uk/research-and-enterprise-development-centre/research-governance-and-ethics/research-governance-and-ethics.aspx	☐
Both myself and the student have read the relevant documentation relating to Data Protection and the GDPR, available on the University web pages at https://cccu.canterbury.ac.uk/governance-and-legal-services/governance-and-legal-services.aspx and I can confirm that this project fully complies.	☐
The chosen topic merits further investigation	☐
The student has the skills to carry out the project	☐
I can confirm that the participant information sheet is completed in full and is appropriate	☐
I have reviewed the procedures for participant recruitment and obtaining informed consent and can confirm that they are appropriate	☐
If a Disclosure & Barring Service (DBS) check is required, this has been carried out	☐

Comments from supervisor:

Section G: Declaration

- ☐ I certify that the information in this form is accurate to the best of my knowledge and belief and I take full responsibility for it.
- ☐ I certify that a risk assessment for this study has been carried out in compliance with the University's Health and Safety policy and has been approved and signed by the relevant Head of School/Department.
- ☐ I certify that my project proposal and methodology has been subject to 'peer review' commensurate with the level of that research. For students this will be carried out by the supervisor and for staff by an appropriately qualified person independent of the research proposed.
- ☐ I certify that any required Disclosure & Barring Service (DBS) check has been carried out.
- ☐ I undertake to carry out this project under the terms specified in the Canterbury Christ Church University Research Governance Handbook.
- ☐ I undertake to inform the relevant Faculty Ethics Panel and Red.resgov@canterbury.ac.uk of any significant change in the question, design or conduct of the research over the course of the project. I understand that such changes may require a new application for ethics approval.
- ☐ I undertake to inform the **Contracts & Compliance Manager** at Red.resgov@canterbury.ac.uk in the **Research and Enterprise Integrity and Development Office** when the proposed study has been completed.
- ☐ I have read and understood the relevant University documentation relating to Data Protection and the GDPR and I am aware of my legal responsibility to comply with the terms of the GDPR and appropriate University policies and guidelines relating to the security and confidentiality of participant or other personal data.
- ☐ I understand that project records/data may be subject to inspection for audit purposes if required in future and that project records should be kept securely for five years or other specified period.
- ☐ I understand that the personal data about me contained in this application will be held by the **Research and Enterprise Integrity and Development Office** and **the relevant Faculty** and that this will be managed according to the principles established in the GDPR and appropriate University policies.

As the Principal Investigator for this study, I confirm that this application has been shared with all other members of the study team	(please tick) ☐

Principal Investigator	Supervisor or module leader (as appropriate)

Ethics Rev Checklist V13_July_18

Appendix F – Participant Consent form

Canterbury Christ Church University

CONSENT FORM

Title of Project: "How does being an Authorised Firearms Officer (AFO), compared with unarmed police officer, affect decision making?" (Working title)

Name of Researcher: Nick Francis

Contact details:

Address:	School of Law, Criminal Justice & Computing, Canterbury Christ Church University, North Holmes Road, Canterbury CT1 1QU
Tel:	07980 402794
Email:	n.j.francis107@canterbury.ac.uk

Please initial box

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.	
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.	
3. I understand that any personal information that I provide to the researchers will be kept strictly confidential	
4. I agree to take part in the above study.	
5. I agree to be audio recorded as part of an interview for this study.	

Name of Participant:	Date:	Signature:

Ethics Rev Checklist V13_July_18

Appendix F - Participant Information sheet

Canterbury Christ Church University

"How does being an AFO, compared with unarmed policing, affect decision making?" (Working Title)

PARTICIPANT INFORMATION SHEET

A research study is being conducted at Canterbury Christ Church University (CCCU) by Nick Francis.

Background

I am conducting research to deepen our understanding of how police officers spontaneously respond to incidents where individuals may have immediate access to lethal weapons with intent to harm themselves or induce officers to do it for them. The focus will be on how a mainly unarmed police service in England &Wales deals with these instances. Specifically, if firearms officers are subsequently called forward, how they respond (tactics, training, command structure) and make decisions to resolve the incident to maintain the safety of the public, police and individuals.

What will you be required to do?

Participants in this study will be required to take part in a pre-scheduled recorded interview, which should last approximately one hour, with the above named researcher.

To participate in this research you must:

- Be over 18 years.
- Be English speaking.
- Work in a field related to the police use of firearms- whether as an operational officer, tactical advisor or in a command role.

Confidentiality - All data and personal information will be stored securely within CCCU premises in accordance with the Data Protection Act 1998 and the University's own data protection requirements. The procedures adopted will meet the EU General Data Protection Regulation (GDPR). Only the named researcher can access data. After completion of the study, all data will be made anonymous (i.e. all personal information associated with the interview data will be removed), and records will be stored for a maximum of five years. Please note that we will not be asking you to disclose any sensitive information, however should any such disclosures occur during the interview, which indicate safeguarding risks or criminal behaviour, we may not be able to maintain strict confidentiality.

Dissemination of results - The results of the study will be shared via a written dissertation and possibly as a journal article. Anonymity of participants will be maintained at all times, including in the dissertation and in any subsequent articles.

Deciding whether to participate - If you have any questions or concerns about the nature, procedures or requirements for participation do not hesitate to contact any of the researcher team via the details below.

Any questions? - Please contact the named researcher on the consent form or the lead researcher:

Researcher: Nick Francis
e-mail: n.j.francis107@canterbury.ac.uk phone number: 07980402794
Academic Supervisor: Prof. Robin Bryant
e-mail: robin.bryant@canterbury.ac.uk; phone number: 01227 767700 (switchboard)

Appendix F – Ethics Amendment submission (submitted 2nd January 2019)

Canterbury Christ Church University	**ETHICS REVIEW** **Project Amendment Form**

Name of Researcher:	Nick Francis
Email address:	n.j.francis107@canterbury.ac.uk
Title of Project:	How does being an Authorised Firearms Officer (AFO), compared with unarmed police officer, affect decision making?
Project Number:	Francis - 17/SAS/78C
Study Start Date:	Sept 2016
Length of Study: (in original submission)	2 years

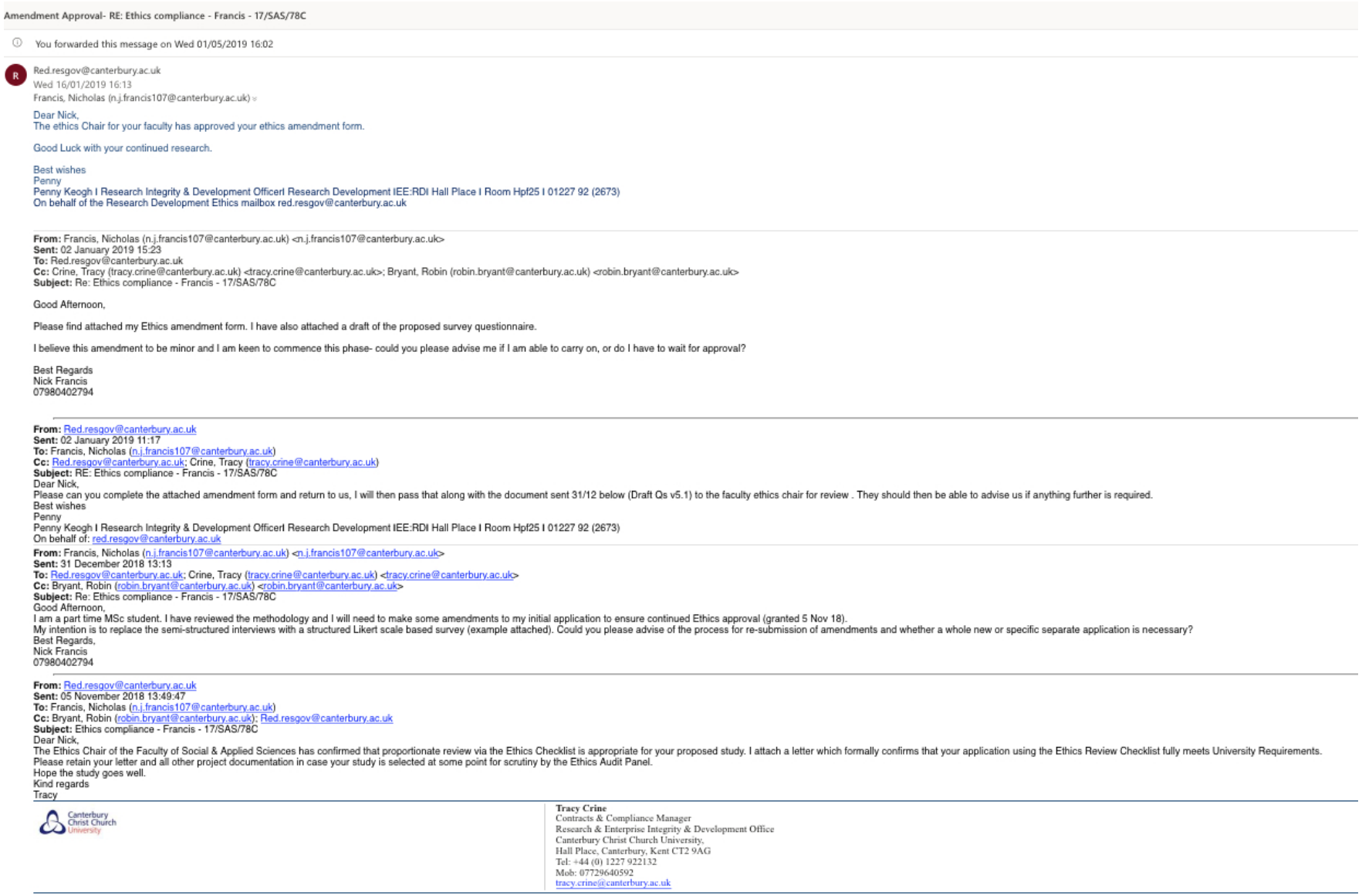
1.	**Change(s) to the original protocol submitted to the ethics committee**
	Please detail as follows:
1.1	**The nature of the change(s).**
	Data collation - My intention is to remove the semi-structured interviews and replace with a structured Likert scale based survey (example attached). I have gained permission from my employer (Metropolitan Police Service) and specifically from the officer in charge of MPS Firearms training (Ch Supt Andy Walker). Permission has been granted to request students attending courses to voluntarily complete the survey. **Methodology** – after review this will not exclusively utilise Grounded Theory but be a mixed methods approach utilising data collated from Case Studies (i.e. Use of Force incidents) and a structured survey.
1.2	**The reason(s) for the change(s).**
	Having reviewed the quantitative data already gathered from MPS Use of Force encounters against my the aims of my research, I believe that a structured survey will generate a significant amount of valuable qualitative related data. As I am a part time MSc student, in full time employment, I need to ensure that my time is utilised to best effect. Whilst in the ideal world I would like to also interview selected staff who may be involved in this type of encounter, I believe adapting my approach will generate the sufficiency of data required and in comparison to Semi-Strutured Interviews will be less time consuming to complete. Due to the nature of the subject and the lack of existing UK based research, it is anticipated this

	thesis will create an opportuninty to enable me to take this research further. By modifying this approach I capture a wider range of staff now during this Masters study, from novice officers who are about to commence firearms training through to experienced staff.
1.3	**How the change(s) affect the project.**
	Apart from the methodology, there is little change in the overall aims of this research. The qualitative data from the Likert scale survey will be processed using SPSS which has been already utilised in the quantative phase.
1.4	**The effect on the project timetable.**
	No anticipated effect on the timetable.

2.	**Other issues**	**YES**	**NO**
	Are there any other issues that may affect the conduct or course of the project? *If "Yes", please describe these below:*		X

Signature of researcher: Date: 2/1/2019

Appendix F – Ethics Amendment approval



Amendment Approval- RE: Ethics compliance - Francis - 17/SAS/78C

You forwarded this message on Wed 01/05/2019 16:02

Red.resgov@canterbury.ac.uk
Wed 16/01/2019 16:13
Francis, Nicholas (n.j.francis107@canterbury.ac.uk)

Dear Nick,
The ethics Chair for your faculty has approved your ethics amendment form.

Good Luck with your continued research.

Best wishes
Penny
Penny Keogh I Research Integrity & Development Officer‌I Research Development IEE:RDI Hall Place I Room Hpf25 I 01227 92 (2673)
On behalf of the Research Development Ethics mailbox red.resgov@canterbury.ac.uk

From: Francis, Nicholas (n.j.francis107@canterbury.ac.uk) <n.j.francis107@canterbury.ac.uk>
Sent: 02 January 2019 15:23
To: Red.resgov@canterbury.ac.uk
Cc: Crine, Tracy (tracy.crine@canterbury.ac.uk) <tracy.crine@canterbury.ac.uk>; Bryant, Robin (robin.bryant@canterbury.ac.uk) <robin.bryant@canterbury.ac.uk>
Subject: Re: Ethics compliance - Francis - 17/SAS/78C

Good Afternoon,

Please find attached my Ethics amendment form. I have also attached a draft of the proposed survey questionnaire.

I believe this amendment to be minor and I am keen to commence this phase- could you please advise me if I am able to carry on, or do I have to wait for approval?

Best Regards
Nick Francis
07980402794

From: Red.resgov@canterbury.ac.uk
Sent: 02 January 2019 11:17
To: Francis, Nicholas (n.j.francis107@canterbury.ac.uk)
Cc: Red.resgov@canterbury.ac.uk; Crine, Tracy (tracy.crine@canterbury.ac.uk)
Subject: RE: Ethics compliance - Francis - 17/SAS/78C
Dear Nick,
Please can you complete the attached amendment form and return to us, I will then pass that along with the document sent 31/12 below (Draft Qs v5.1) to the faculty ethics chair for review . They should then be able to advise us if anything further is required.
Best wishes
Penny
Penny Keogh I Research Integrity & Development Officer‌I Research Development IEE:RDI Hall Place I Room Hpf25 I 01227 92 (2673)
On behalf of: red.resgov@canterbury.ac.uk

From: Francis, Nicholas (n.j.francis107@canterbury.ac.uk) <n.j.francis107@canterbury.ac.uk>
Sent: 31 December 2018 13:13
To: Red.resgov@canterbury.ac.uk; Crine, Tracy (tracy.crine@canterbury.ac.uk) <tracy.crine@canterbury.ac.uk>
Cc: Bryant, Robin (robin.bryant@canterbury.ac.uk) <robin.bryant@canterbury.ac.uk>
Subject: Re: Ethics compliance - Francis - 17/SAS/78C
Good Afternoon,
I am a part time MSc student. I have reviewed the methodology and I will need to make some amendments to my initial application to ensure continued Ethics approval (granted 5 Nov 18).
My intention is to replace the semi-structured interviews with a structured Likert scale based survey (example attached). Could you please advise of the process for re-submission of amendments and whether a whole new or specific separate application is necessary?
Best Regards,
Nick Francis
07980402794

From: Red.resgov@canterbury.ac.uk
Sent: 05 November 2018 13:49:47
To: Francis, Nicholas (n.j.francis107@canterbury.ac.uk)
Cc: Bryant, Robin (robin.bryant@canterbury.ac.uk); Red.resgov@canterbury.ac.uk
Subject: Ethics compliance - Francis - 17/SAS/78C
Dear Nick,
The Ethics Chair of the Faculty of Social & Applied Sciences has confirmed that proportionate review via the Ethics Checklist is appropriate for your proposed study. I attach a letter which formally confirms that your application using the Ethics Review Checklist fully meets University Requirements.
Please retain your letter and all other project documentation in case your study is selected at some point for scrutiny by the Ethics Audit Panel.
Hope the study goes well.
Kind regards
Tracy

Canterbury Christ Church University

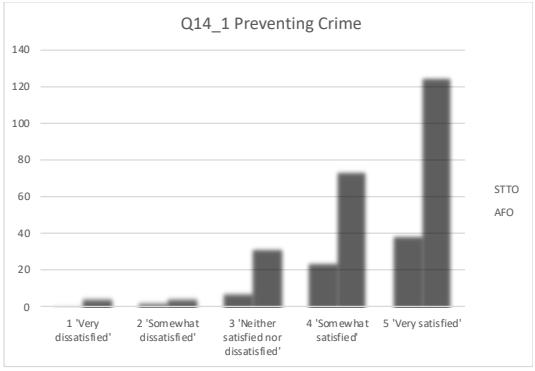
Tracy Crine
Contracts & Compliance Manager
Research & Enterprise Integrity & Development Office
Canterbury Christ Church University,
Hall Place, Canterbury, Kent CT2 9AG
Tel: +44 (0) 1227 922132
Mob: 07729640592
tracy.crine@canterbury.ac.uk

Appendix F - CCCU Ethics Committee- amendment approval email (received 16th January 2019).

Appendix G- Survey Analysis Q14

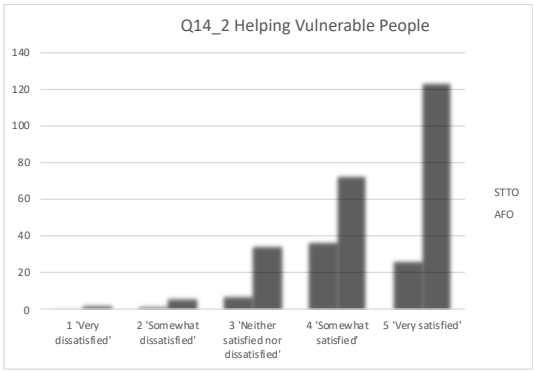
Q14_1 Preventing Crime	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very dissatisfied'	0	1.175	5	3.825	5
2 'Somewhat dissatisfied'	3	1.879	5	6.121	8
3 'Neither satisfied nor dissatisfied'	8	9.397	32	30.603	40
4 'Somewhat satisfied'	24	23.022	74	74.978	98
5 'Very satisfied'	39	38.527	125	125.473	164
Total	74		241		315

Note: Fisher's Exact Test for Count Data p=0.6754 (2-sided)



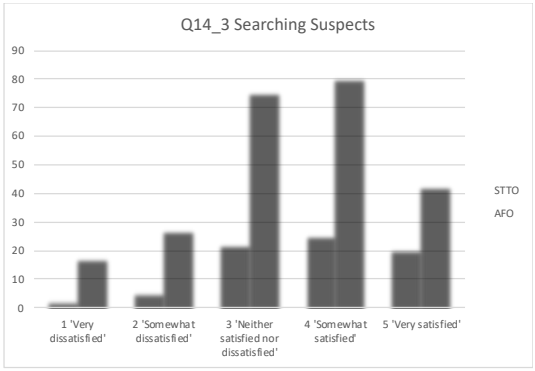
Q14_2 Helping Vulnerable People	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very dissatisfied'	0	0.705	3	2.295	3
2 'Somewhat dissatisfied'	2	1.879	6	6.121	8
3 'Neither satisfied nor dissatisfied'	8	10.102	35	32.898	43
4 'Somewhat satisfied'	37	25.841	73	84.159	110
5 'Very satisfied'	27	35.473	124	115.527	151
Total	74		241		315

Note: Fisher's Exact Test for Count Data p=0.0359 (2-sided)



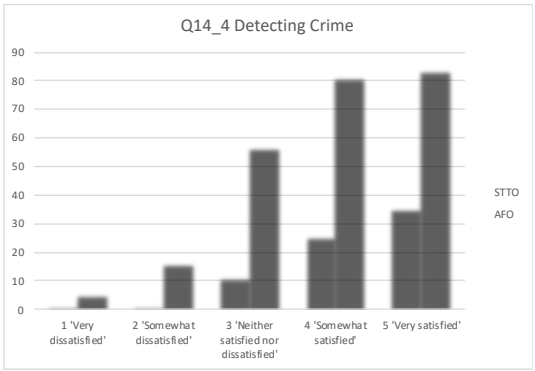
Q14_3 Searching Suspects	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very dissatisfied'	2	4.463	17	14.537	19
2 'Somewhat dissatisfied'	5	7.517	27	24.483	32
3 'Neither satisfied nor dissatisfied'	22	22.787	75	74.213	97
4 'Somewhat satisfied'	25	24.667	80	80.333	105
5 'Very satisfied'	20	14.565	42	47.435	62
Total	74		241		315

Note: Fisher's Exact Test for Count Data p=0.2642 (2-sided)



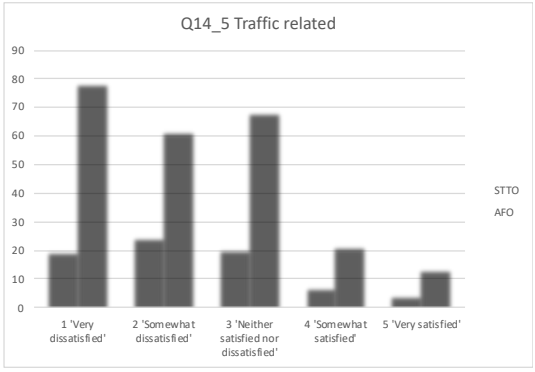
Q14_4 Detecting Crime	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very dissatisfied'	1	1.395	5	4.605	6
2 'Somewhat dissatisfied'	1	3.952	16	13.048	17
3 'Neither satisfied nor dissatisfied'	11	15.576	56	51.424	67
4 'Somewhat satisfied'	25	24.643	81	81.357	106
5 'Very satisfied'	35	27.433	83	90.567	118
Total	73		241		314

Note: Fisher's Exact Test for Count Data p=0.1098 (2-sided)



Q14_5 Traffic Related	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very dissatisfied'	19	22.787	78	74.213	97
2 'Somewhat dissatisfied'	24	19.968	61	65.032	85
3 'Neither satisfied nor dissatisfied'	20	20.673	68	67.327	88
4 'Somewhat satisfied'	7	6.578	21	21.422	28
5 'Very satisfied'	4	3.994	13	13.006	17
Total	74		241		315

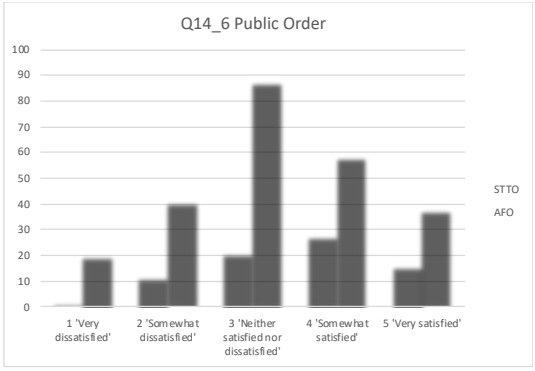
Note: Fisher's Exact Test for Count Data p=0.7285 (2-sided)



Appendix G- Survey Analysis Q14

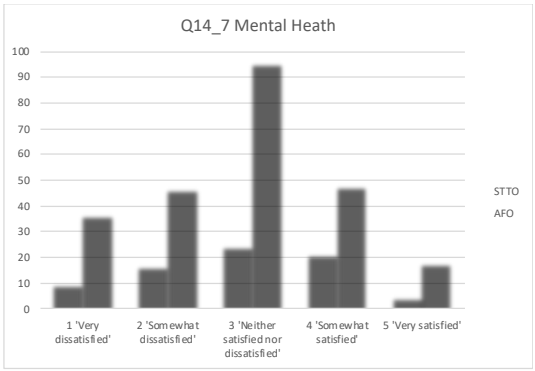
Q14_6 Public Order	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very dissatisfied'	1	4.698	19	15.302	20
2 'Somewhat dissatisfied'	11	11.981	40	39.019	51
3 'Neither satisfied nor dissatisfied'	20	25.137	87	81.863	107
4 'Somewhat satisfied'	27	19.968	58	65.032	85
5 'Very satisfied'	15	12.216	37	39.784	52
Total	74		241		315

Note: Fisher's Exact Test for Count Data p=0.0481 (2-sided)



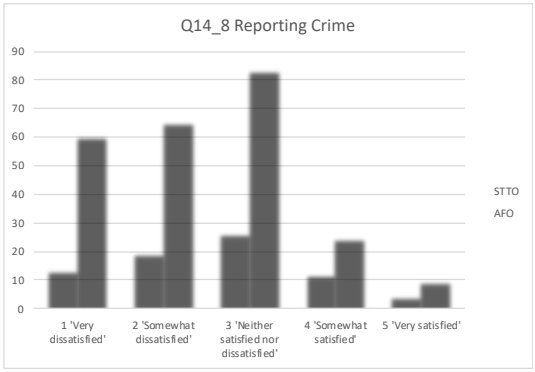
Q14_7 Mental Health	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very dissatisfied'	9	10.571	36	34.429	45
2 'Somewhat dissatisfied'	16	14.565	46	47.435	62
3 'Neither satisfied nor dissatisfied'	24	27.956	95	91.044	119
4 'Somewhat satisfied'	21	15.975	47	52.025	68
5 'Very satisfied'	4	4.933	17	16.067	21
Total	74		241		315

Note: Fisher's Exact Test for Count Data p=0.4958 (2-sided)



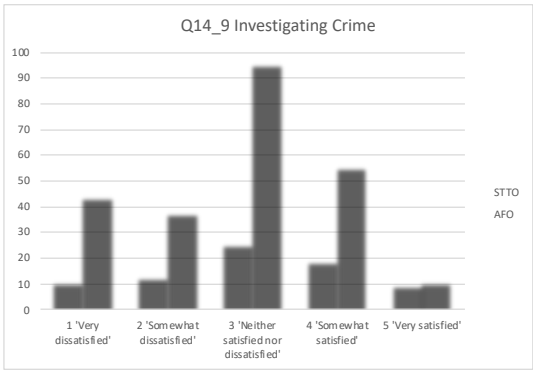
Q14_8 Reporting Crime	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very dissatisfied'	13	17.149	60	55.851	73
2 'Somewhat dissatisfied'	19	19.733	65	64.267	84
3 'Neither satisfied nor dissatisfied'	26	25.606	83	83.394	109
4 'Somewhat satisfied'	12	8.457	24	27.543	36
5 'Very satisfied'	4	3.054	9	9.946	13
Total	74		241		315

Note: Fisher's Exact Test for Count Data p=0.4257 (2-sided)



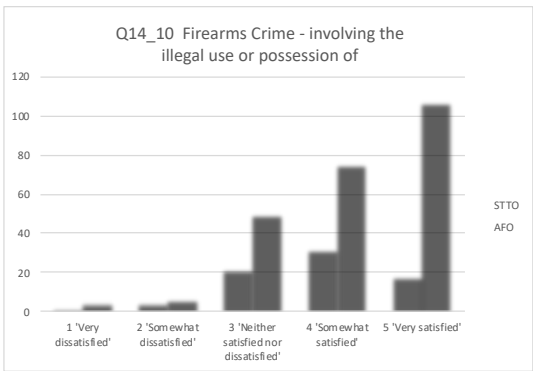
Q14_9 Investigating Crime	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very dissatisfied'	10	12.490	43	40.510	53
2 'Somewhat dissatisfied'	12	11.548	37	37.452	49
3 'Neither satisfied nor dissatisfied'	25	28.280	95	91.720	120
4 'Somewhat satisfied'	18	17.204	55	55.796	73
5 'Very satisfied'	9	4.478	10	14.522	19
Total	74		240		314

Note: Fisher's Exact Test for Count Data p=0.1557 (2-sided)



Q14_10 Firearms Crime - involving the illegal use or possession of	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very dissatisfied'	1	1.178	4	3.822	5
2 'Somewhat dissatisfied'	4	2.357	6	7.643	10
3 'Neither satisfied nor dissatisfied'	21	16.497	49	53.503	70
4 'Somewhat satisfied'	31	24.981	75	81.019	106
5 'Very satisfied'	17	28.987	106	94.013	123
Total	74		240		314

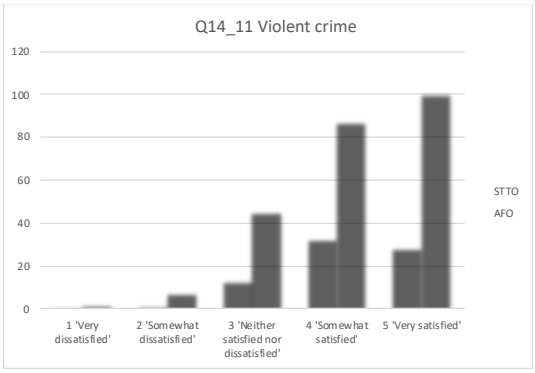
Note: Fisher's Exact Test for Count Data p=0.0109 (2-sided)



Appendix G- Survey Analysis Q14

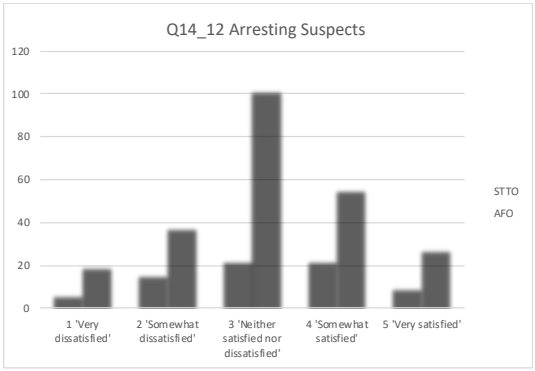
Q14_11 Violent Crime	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very dissatisfied'	0	0.470	2	1.529	2
2 'Somewhat dissatisfied'	1	1.879	7	6.115	8
3 'Neither satisfied nor dissatisfied'	13	13.625	45	44.331	58
4 'Somewhat satisfied'	32	27.956	87	90.955	119
5 'Very satisfied'	28	30.070	100	97.834	128
Total	74		241		315

Note: Fisher's Exact Test for Count Data p=0.8449 (2-sided)



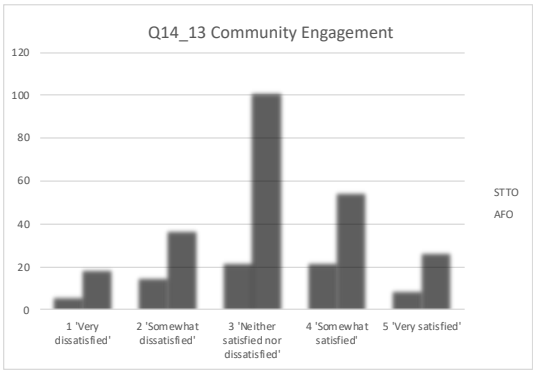
Q14_12 Arresting Suspects	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very dissatisfied'	6	5.911	19	19.089	25
2 'Somewhat dissatisfied'	15	12.294	37	39.706	52
3 'Neither satisfied nor dissatisfied'	22	29.080	101	93.920	123
4 'Somewhat satisfied'	22	18.204	55	58.796	77
5 'Very satisfied'	9	8.511	27	27.489	36
Total	74		239		313

Note: Fisher's Exact Test for Count Data p=0.3235 (2-sided)



Q14_13 Community Engagement	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very dissatisfied'	6	5.911	19	19.089	25
2 'Somewhat dissatisfied'	15	12.294	37	39.706	52
3 'Neither satisfied nor dissatisfied'	22	29.080	101	93.920	123
4 'Somewhat satisfied'	22	18.204	55	58.796	77
5 'Very satisfied'	9	8.511	27	27.489	36
Total	74		239		313

Note: Fisher's Exact Test for Count Data p=0.3616 (2-sided)



Appendix G- Survey Analysis Q14

AFO or STTO		Significance level	
		Fishers	Chi-Sq
Q14_1	Preventing Crime	0.6754	NA
Q14_2	Helping Vulnerable People	0.0359	0.034
Q14_3	Searching Suspects	0.2642	NA
Q14_4	Detecting Crime	0.1098	NA
Q14_5	Traffic related	0.7285	NA
Q14_6	Public Order	0.0481	0.053
Q14_7	Mental Heath	0.4958	NA
Q14_8	Reporting Crime	0.4257	NA
Q14_9	Investigating Crime	0.1557	NA
Q14_10	Firearms Crime -illegal use/ possession of	0.0109	0.021
Q14_11	Violent crime	0.8449	NA
Q14_12	Arresting Suspects	0.3235	NA
Q14_13	Community Engagement	0.3616	NA

Note: Chronbach Alpha =.828

Table 25. Q14 – Significance level results.

	AFO or STTO	STTO				AFO				Total			
		Mean	N	Std. Dev	Median	Mean	N	Std. Dev	Median	Mean	N	Std. Dev	Median
Q14_1	Preventing Crime	4.34	74	0.832	5	4.28	241	0.919	5	4.3	315	0.899	5
Q14_2	Helping Vulnerable People	4.2	74	0.74	4	4.28	241	0.892	5	4.26	315	0.858	4
Q14_3	Searching Suspects	3.76	74	1.018	4	3.43	241	1.116	4	3.5	315	1.101	4
Q14_4	Detecting Crime	4.26	73	0.866	4	3.92	241	1.013	4	4	314	0.99	4
Q14_5	Traffic related	2.36	74	1.13	2	2.29	241	1.166	2	2.31	315	1.156	2
Q14_6	Public Order	3.59	74	1.019	4	3.22	241	1.136	3	3.31	315	1.119	3
Q14_7	Mental Heath	2.93	74	1.102	3	2.85	241	1.117	3	2.87	315	1.112	3
Q14_8	Reporting Crime	2.66	74	1.114	3	2.41	241	1.08	2	2.47	315	1.092	3
Q14_9	Investigating Crime	3.05	74	1.204	3	2.8	240	1.11	3	2.86	314	1.136	3
Q14_10	Firearms Crime - illegal use or possession of	3.8	74	0.906	4	4.14	240	0.938	4	4.06	314	0.941	4
Q14_11	Violent crime	4.18	74	0.765	4	4.15	241	0.88	4	4.15	315	0.853	4
Q14_12	Arresting Suspects	4.38	74	0.716	5	4.17	240	0.988	4	4.22	314	0.934	4
Q14_13	Community Engagement	3.18	74	1.139	3	3.14	239	1.067	3	3.15	313	1.083	3

Table 26. Q14 - Mean, Median and Standard Deviation for Unarmed and STTO.

AFO or STTO	Mann-Whitney U test	*p-value*	MW *U value*	Std test Stat *z*	Effect size *r*
Q14_1	Preventing Crime	0.784	8746	-0.274	-0.0154
Q14_2	Helping Vulnerable People	0.162	9798.5	1.4	0.0789
Q14_3	Searching Suspects	0.031	7496.5	-2.155	-0.1214
Q14_4	Detecting Crime	0.009	7118.5	-2.605	-0.1470
Q14_5	Traffic related	0.598	8568.5	-0.528	-0.0297
Q14_6	Public Order	0.014	7283	-2.47	-0.1392
Q14_7	Mental Heath	0.507	8479.5	-0.664	-0.0374
Q14_8	Reporting Crime	0.082	7771.5	-1.737	-0.0979
Q14_9	Investigating Crime	0.120	7859.5	-1.556	-0.0878
Q14_10	Firearms Crime -illegal use/ possession of	0.002	10835	3.035	0.1713
Q14_11	Violent crime	0.958	8951	0.053	0.0030
Q14_12	Arresting Suspects	0.232	8126	-1.196	-0.0675
Q14_13	Community Engagement	0.750	8635	-0.319	-0.0180

Table 27. Q14 – Mann-Whitney U test results.

Appendix G- Survey Analysis Q14

Correlations

Spearman's rho				Q14_1	Q14_2	Q14_3	Q14_4	Q14_5	Q14_6	Q14_7	Q14_8	Q14_9	Q14_10	Q14_11	Q14_12	Q14_13
STTO	Q14_1	Preventing Crime	Correlation Coefficient	1												
			Sig. (2-tailed)	.												
			N	74												
	Q14_2	Helping Vulnerable People	Correlation Coefficient	.466**	1											
			Sig. (2-tailed)	0	.											
			N	74	74											
	Q14_3	Searching Suspects	Correlation Coefficient	.286*	.296*	1										
			Sig. (2-tailed)	0.013	0.011	.										
			N	74	74	74										
	Q14_4	Detecting Crime	Correlation Coefficient	.425**	.418**	0.192	1									
			Sig. (2-tailed)	0	0	0.103	.									
			N	73	73	73	73									
	Q14_5	Traffic related	Correlation Coefficient	-0.169	-0.003	0.061	-0.012	1								
			Sig. (2-tailed)	0.149	0.977	0.608	0.921	.								
			N	74	74	74	73	74								
	Q14_6	Public Order	Correlation Coefficient	0.107	0.086	0.071	0.103	0.155	1							
			Sig. (2-tailed)	0.364	0.467	0.545	0.386	0.188	.							
			N	74	74	74	73	74	74							
	Q14_7	Mental Heath	Correlation Coefficient	0.113	.273*	0.083	.279*	0.108	0.186	1						
			Sig. (2-tailed)	0.336	0.019	0.48	0.017	0.36	0.113	.						
			N	74	74	74	73	74	74	74						
	Q14_8	Reporting Crime	Correlation Coefficient	-0.086	-0.151	0.121	-0.001	0.171	0.197	.465**	1					
			Sig. (2-tailed)	0.466	0.2	0.304	0.995	0.146	0.093	0	.					
			N	74	74	74	73	74	74	74	74					
	Q14_9	Investigating Crime	Correlation Coefficient	0.088	0.147	0.045	.338**	0.112	-0.166	.461**	.459**	1				
			Sig. (2-tailed)	0.455	0.212	0.705	0.003	0.343	0.158	0	0	.				
			N	74	74	74	73	74	74	74	74	74				
	Q14_10	Firearms Crime	Correlation Coefficient	.383**	.368**	.265*	.328**	0.127	.431**	0.123	0.06	0.084	1			
			Sig. (2-tailed)	0.001	0.001	0.022	0.005	0.281	0	0.295	0.612	0.475	.			
			N	74	74	74	73	74	74	74	74	74	74			
	Q14_11	Violent crime	Correlation Coefficient	.409**	.382**	.263*	.342**	0.13	.291*	0.08	0.076	0.159	.690**	1		
			Sig. (2-tailed)	0	0.001	0.024	0.003	0.271	0.012	0.498	0.519	0.175	0	.		
			N	74	74	74	73	74	74	74	74	74	74	74		
	Q14_12	Arresting Suspects	Correlation Coefficient	.370**	.249*	.450**	.334**	0.118	.363**	0.045	0.08	-0.057	.522**	.664**	1	
			Sig. (2-tailed)	0.001	0.033	0	0.004	0.315	0.001	0.705	0.498	0.632	0	0	.	
			N	74	74	74	73	74	74	74	74	74	74	74	74	
	Q14_13	Community Engagement	Correlation Coefficient	0.212	.399**	0.174	.240*	0.216	.233*	.434**	.311**	0.184	.285*	.244*	.252*	1
			Sig. (2-tailed)	0.07	0	0.138	0.041	0.065	0.046	0	0.007	0.116	0.014	0.036	0.03	.
			N	74	74	74	73	74	74	74	74	74	74	74	74	74
				Q14_1	Q14_2	Q14_3	Q14_4	Q14_5	Q14_6	Q14_7	Q14_8	Q14_9	Q14_10	Q14_11	Q14_12	Q14_13
AFO	Q14_1	Preventing Crime	Correlation Coefficient	1												
			Sig. (2-tailed)	.												
			N	241												
	Q14_2	Helping Vulnerable People	Correlation Coefficient	.695**	1											
			Sig. (2-tailed)	0	.											
			N	241	241											
	Q14_3	Searching Suspects	Correlation Coefficient	.311**	.204**	1										
			Sig. (2-tailed)	0	0.001	.										
			N	241	241	241										
	Q14_4	Detecting Crime	Correlation Coefficient	.569**	.463**	.401**	1									
			Sig. (2-tailed)	0	0	0	.									
			N	241	241	241	241									
	Q14_5	Traffic related	Correlation Coefficient	0.053	0.088	.246**	.228**	1								
			Sig. (2-tailed)	0.412	0.173	0	0	.								
			N	241	241	241	241	241								
	Q14_6	Public Order	Correlation Coefficient	.161*	.144*	.442**	.304**	.373**	1							
			Sig. (2-tailed)	0.012	0.025	0	0	0	.							
			N	241	241	241	241	241	241							
	Q14_7	Mental Heath	Correlation Coefficient	0.03	.146*	.228**	.153*	.400**	.322**	1						
			Sig. (2-tailed)	0.643	0.024	0	0.017	0	0	.						
			N	241	241	241	241	241	241	241						
	Q14_8	Reporting Crime	Correlation Coefficient	0.122	.204**	.315**	.251**	.580**	.341**	.546**	1					
			Sig. (2-tailed)	0.059	0.001	0	0	0	0	0	.					
			N	241	241	241	241	241	241	241	241					
	Q14_9	Investigating Crime	Correlation Coefficient	.224**	.209**	.339**	.406**	.465**	.330**	.396**	.618**	1				
			Sig. (2-tailed)	0	0.001	0	0	0	0	0	0	.				
			N	240	240	240	240	240	240	240	240	240				
	Q14_10	Firearms Crime	Correlation Coefficient	.310**	.211**	.250**	.226**	-.153*	.188**	-0.054	-.127*	0.006	1			
			Sig. (2-tailed)	0	0.001	0	0	0.017	0.003	0.403	0.05	0.931	.			
			N	240	240	240	240	240	240	240	240	239	240			
	Q14_11	Violent crime	Correlation Coefficient	.383**	.297**	.439**	.369**	-0.052	.341**	0.085	0.022	.131*	.772**	1		
			Sig. (2-tailed)	0	0	0	0	0.426	0	0.186	0.732	0.042	0	.		
			N	241	241	241	241	241	241	241	241	240	240	241		
	Q14_12	Arresting Suspects	Correlation Coefficient	.401**	.202**	.428**	.385**	-0.028	.312**	0.072	0.061	.274**	.539**	.635**	1	
			Sig. (2-tailed)	0	0.002	0	0	0.667	0	0.266	0.349	0	0	0	.	
			N	240	240	240	240	240	240	240	240	239	239	240	240	
	Q14_13	Community Engagement	Correlation Coefficient	.274**	.366**	.198**	.288**	.332**	.225**	.403**	.448**	.406**	0.04	0.072	.189**	1
			Sig. (2-tailed)	0	0	0.002	0	0	0	0	0	0	0.536	0.269	0.003	.
			N	239	239	239	239	239	239	239	239	238	238	239	238	239

** Correlation is significant at the 0.01 level (2-taile

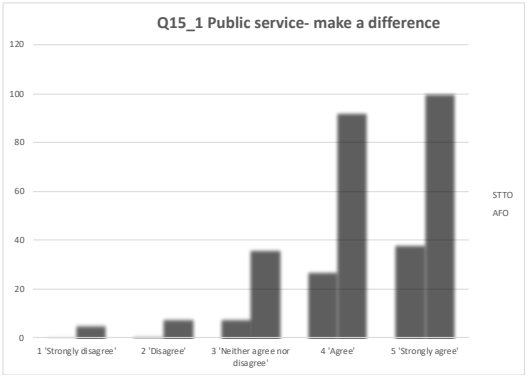
* Correlation is significant at the 0.05 level (2-tailed

a AFO or STTO = AFO

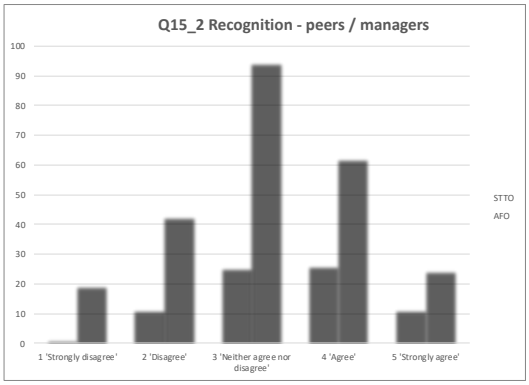
Table 28. Q14 Spearman's Correlation (r_s) results.

Appendix G- Survey Analysis Q15

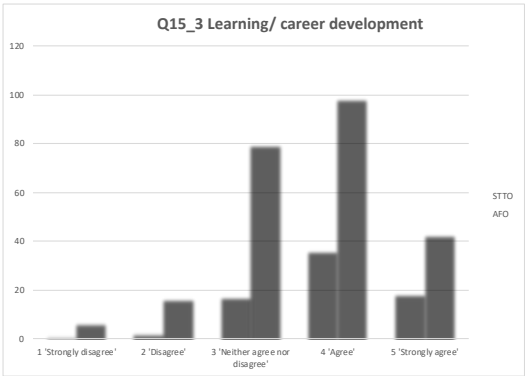
Q15_1 Public Service- making a difference	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Strongly disagree'	0	1.175	5	3.825	5
2 'Disagree'	1	2.114	8	6.886	9
3 'Neither agree nor disagree'	8	10.337	36	33.663	44
4 'Agree'	27	27.956	92	91.044	119
5 'Strongly agree'	38	32.419	100	105.581	138
Total	74		241		315



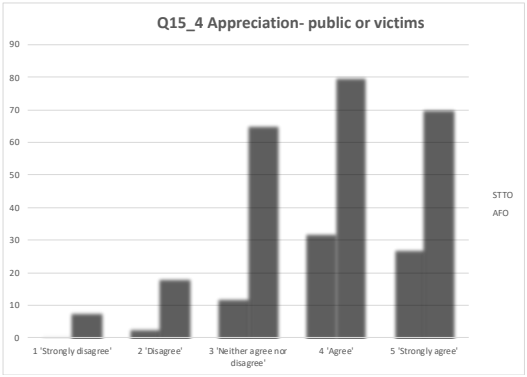
Q15_2 Recognition - peers / managers	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Strongly disagree'	1	4.698	19	15.302	20
2 'Disagree'	11	12.451	42	40.549	53
3 'Neither agree nor disagree'	25	27.956	94	91.044	119
4 'Agree'	26	20.673	62	67.327	88
5 'Strongly agree'	11	8.222	24	26.778	35
Total	74		241		315



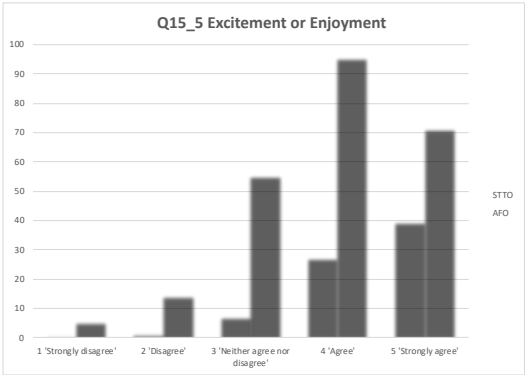
Q15_3 Learning/ career development	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Strongly disagree'	1	1.644	6	5.356	7
2 'Disagree'	2	4.229	16	13.771	18
3 'Neither agree nor disagree'	17	22.552	79	73.448	96
4 'Agree'	36	31.479	98	102.521	134
5 'Strongly agree'	18	14.095	42	45.905	60
Total	74		241		315



Q15_4 Appreciation- public or victims	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Strongly disagree'	0	1.879	8	6.121	8
2 'Disagree'	3	4.933	18	16.067	21
3 'Neither agree nor disagree'	12	18.089	65	58.911	77
4 'Agree'	32	26.311	80	85.689	112
5 'Strongly agree'	27	22.787	70	74.213	97
Total	74		241		315

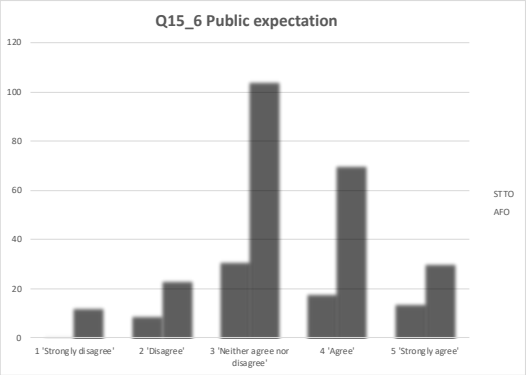


Q15_5 Excitement or Enjoyment	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Strongly disagree'	0	1.178	5	3.822	5
2 'Disagree'	1	3.535	14	11.465	15
3 'Neither agree nor disagree'	7	14.611	55	47.389	62
4 'Agree'	27	28.752	95	93.248	122
5 'Strongly agree'	39	25.924	71	84.076	110
Total	74		240		314

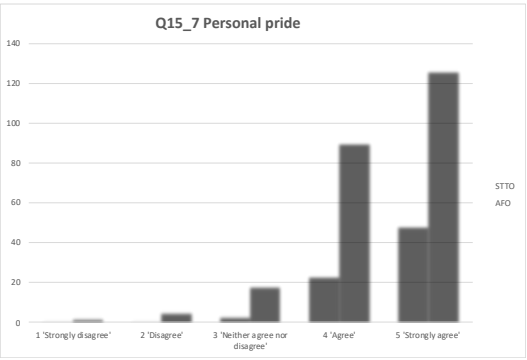


Appendix G- Survey Analysis Q15

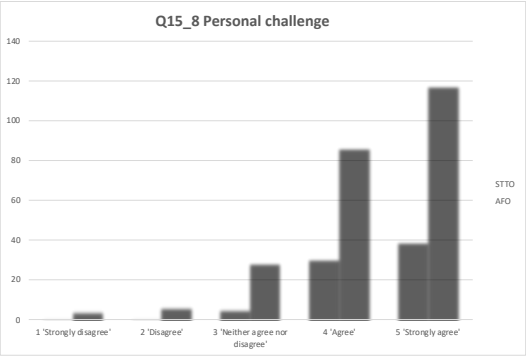
Q15_6 Public expectation	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Strongly disagree'	0	2.778	12	9.222	12
2 'Disagree'	9	7.408	23	24.592	32
3 'Neither agree nor disagree'	31	31.254	104	103.746	135
4 'Agree'	18	20.373	70	67.627	88
5 'Strongly agree'	14	10.186	30	33.814	44
Total	72		239		311



Q15_7 Personal Pride	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Strongly disagree'	0	0.470	2	1.530	2
2 'Disagree'	0	1.175	5	3.825	5
3 'Neither agree nor disagree'	3	4.933	18	16.067	21
4 'Agree'	23	26.546	90	86.454	113
5 'Strongly agree'	48	40.876	126	133.124	174
Total	74		241		315



Q15_8 Personal Challenge	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Strongly disagree'	0	0.940	4	3.060	4
2 'Disagree'	0	1.410	6	4.590	6
3 'Neither agree nor disagree'	5	7.752	28	25.248	33
4 'Agree'	30	27.251	86	88.749	116
5 'Strongly agree'	39	36.648	117	119.352	156
Total	74		241		315



AFO or STTO		STTO				AFO				Total				
		Mean	N	SD	Median	Mean	N	SD	Median	Mean	N	SD	Median	Range
Q15_1	Public service- make a difference	4.38	74	0.735	5	4.14	241	0.932	4	4.19	315	0.894	4	4
Q15_2	Recognition - peers / managers	3.47	74	0.968	3.5	3.12	241	1.065	3	3.21	315	1.052	3	4
Q15_3	Learning/ career development	3.92	74	0.84	4	3.64	241	0.93	4	3.7	315	0.916	4	4
Q15_4	Appreciation- public or victims	4.12	74	0.827	4	3.77	241	1.054	4	3.85	315	1.015	4	4
Q15_5	Excitement or Enjoyment	4.41	74	0.72	5	3.89	240	0.968	4	4.01	314	0.941	4	4
Q15_6	Public expectation	3.51	72	0.949	3	3.35	239	0.988	3	3.39	311	0.98	3	4
Q15_7	Personal pride	4.61	74	0.569	5	4.38	241	0.782	5	4.43	315	0.743	5	4
Q15_8	Personal challenge	4.46	74	0.623	5	4.27	241	0.884	4	4.31	315	0.833	4	4

Table 29. Q15 - Mean, Median and Standard Deviation for Unarmed and STTO.

Appendix G- Survey Analysis Q15

AFO or STTO		Fishers	Chi-Sq
Q15_1	Public service- make a difference	0.4973	NA
Q15_2	Recognition - peers / managers	0.1011	NA
Q15_3	Learning/ career development	0.2170	NA
Q15_4	Appreciation- public or victims	0.0731	NA
Q15_5	Excitement or Enjoyment	0.0014	NA
Q15_6	Public expectation	0.1562	NA
Q15_7	Personal pride	0.3313	NA
Q15_8	Personal challenge	0.4101	NA

Note: Chronbach Alpha =.815

Table 30. Q15 – Significance level results.

		Mann-Whitney U test			
AFO or STTO		*p-value*	MW *U value*	Std test Stat *z*	Effect size *r*
Q15_1	Public service- make a difference	0.067	7754	-1.831	-0.2128
Q15_2	Recognition - peers / managers	0.016	7329.5	-2.418	-0.2811
Q15_3	Learning/ career development	0.019	7397.5	-2.353	-0.2735
Q15_4	Appreciation- public or victims	0.015	7327	-2.431	-0.2826
Q15_5	Excitement or Enjoyment	0.000	6166.5	-4.211	-0.4895
Q15_6	Public expectation	0.365	8031.5	-0.906	-0.1068
Q15_7	Personal pride	0.034	7632	-2.116	-0.2460
Q15_8	Personal challenge	0.229	8166.5	-1.204	-0.1400

Table 31. Q15 – Mann-Whitney U test results.

Correlations Spearman's rho				Q15_1	Q15_2	Q15_3	Q15_4	Q15_5	Q15_6	Q15_7	Q15_8
STTO	Q15_1	Public service i.e. making a difference	Pearson Correlation	1							
			Sig. (2-tailed)								
			N	74							
	Q15_2	Recognition from peers or managers	Pearson Correlation	0.226	1						
			Sig. (2-tailed)	0.052							
			N	74	74						
	Q15_3	Learning or career development	Pearson Correlation	.383**	.385**	1					
			Sig. (2-tailed)	0.001	0.001						
			N	74	74	74					
	Q15_4	Appreciation from public or victims	Pearson Correlation	.464**	0.15	.310**	1				
			Sig. (2-tailed)	0	0.203	0.007					
			N	74	74	74	74				
	Q15_5	Excitement or Enjoyment	Pearson Correlation	.276*	.271*	.372**	.422**	1			
			Sig. (2-tailed)	0.017	0.019	0.001	0				
			N	74	74	74	74	74			
	Q15_6	Public expectation	Pearson Correlation	.375**	0.185	0.222	.440**	.361**	1		
			Sig. (2-tailed)	0.001	0.12	0.061	0	0.002			
			N	72	72	72	72	72	72		
	Q15_7	Personal pride	Pearson Correlation	.360**	0.018	0.105	.423**	.293*	.423**	1	
			Sig. (2-tailed)	0.002	0.88	0.375	0	0.011	0		
			N	74	74	74	74	74	72	74	
	Q15_8	Personal challenge	Pearson Correlation	.303**	0.021	.334**	.342**	.495**	.356**	.592**	1
			Sig. (2-tailed)	0.009	0.86	0.004	0.003	0	0.002	0	
			N	74	74	74	74	74	72	74	74
AFO	Q15_1	Public service i.e. making a difference	Pearson Correlation	1							
			Sig. (2-tailed)								
			N	241							
	Q15_2	Recognition from peers or managers	Pearson Correlation	.239**	1						
			Sig. (2-tailed)	0							
			N	241	241						
	Q15_3	Learning or career development	Pearson Correlation	.293**	.378**	1					
			Sig. (2-tailed)	0	0						
			N	241	241	241					
	Q15_4	Appreciation from public or victims	Pearson Correlation	.444**	.308**	.217**	1				
			Sig. (2-tailed)	0	0	0.001					
			N	241	241	241	241				
	Q15_5	Excitement or Enjoyment	Pearson Correlation	.156*	.301**	.381**	.257**	1			
			Sig. (2-tailed)	0.016	0	0	0				
			N	240	240	240	240	240			
	Q15_6	Public expectation	Pearson Correlation	.415**	.345**	.246**	.432**	.192**	1		
			Sig. (2-tailed)	0	0	0	0	0.003			
			N	239	239	239	239	238	239		
	Q15_7	Personal pride	Pearson Correlation	.437**	.238**	.391**	.420**	.493**	.384**	1	
			Sig. (2-tailed)	0	0	0	0	0	0		
			N	241	241	241	241	240	239	241	
	Q15_8	Personal challenge	Pearson Correlation	.375**	.234**	.489**	.321**	.573**	.313**	.797**	1
			Sig. (2-tailed)	0	0	0	0	0	0	0	
			N	241	241	241	241	240	239	241	241

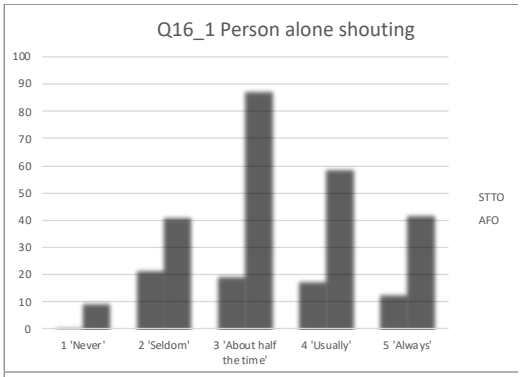
** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

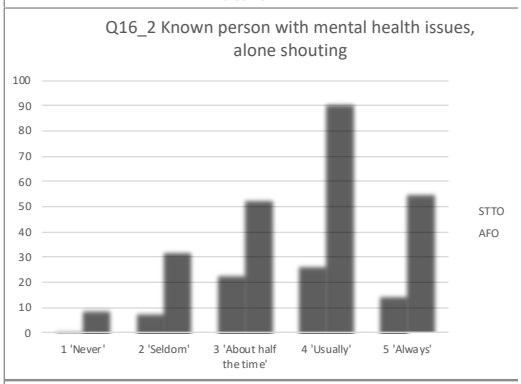
Table 32. Q15 Spearman's Correlation (r_s) results.

Appendix G- Survey Analysis Q16.

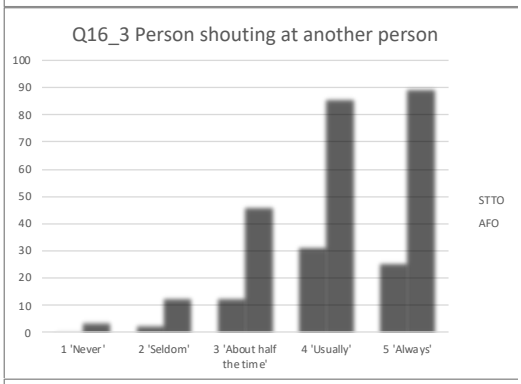
Q16_1 Person alone shouting	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Never'	1	2.592	10	8.408	11
2 'Seldom'	22	14.847	41	48.153	63
3 'About half the time'	20	25.452	88	82.548	108
4 'Usually'	18	18.146	59	58.854	77
5 'Always'	13	12.962	42	42.038	55
Total	74		240		314



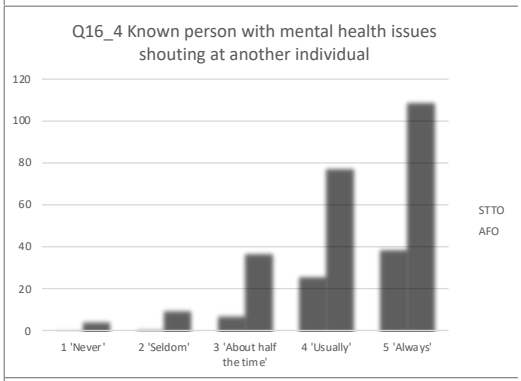
Q16_2 Known person with mental health issues, alone shouting	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Never'	1	2.357	9	7.643	10
2 'Seldom'	8	9.427	32	30.573	40
3 'About half the time'	23	17.911	53	58.089	76
4 'Usually'	27	27.809	91	90.191	118
5 'Always'	15	16.497	55	53.503	70
Total	74		240		314



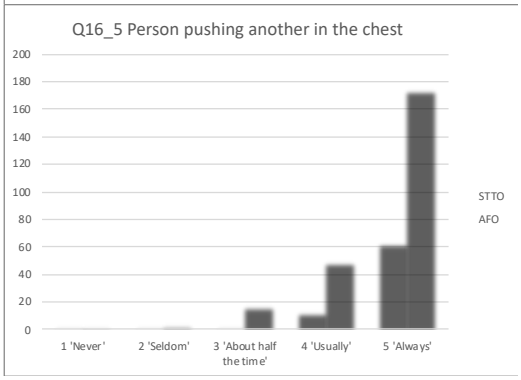
Q16_3 Person shouting at another person	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Never'	0	0.946	4	3.054	4
2 'Seldom'	3	3.783	13	12.217	16
3 'About half the time'	13	13.949	46	45.051	59
4 'Usually'	32	27.898	86	90.102	118
5 'Always'	26	27.425	90	88.575	116
Total	74		239		313



Q16_4 Known person with mental health issues shouting at another individual	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Never'	0	1.182	5	3.818	5
2 'Seldom'	1	2.601	10	8.399	11
3 'About half the time'	8	10.639	37	34.361	45
4 'Usually'	26	24.588	78	79.412	104
5 'Always'	39	34.990	109	113.010	148
Total	74		239		313

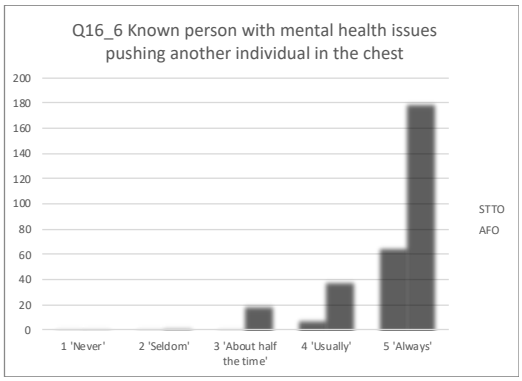


Q16_5 Person pushing another in the chest	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Never'	0	0.236	1	0.764	1
2 'Seldom'	0	0.471	2	1.529	2
3 'About half the time'	0	3.771	16	12.229	16
4 'Usually'	12	14.140	48	45.860	60
5 'Always'	62	55.382	173	179.618	235
Total	74		240		314

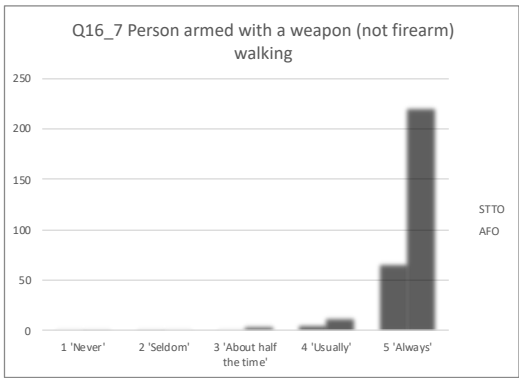


Appendix G- Survey Analysis Q16.

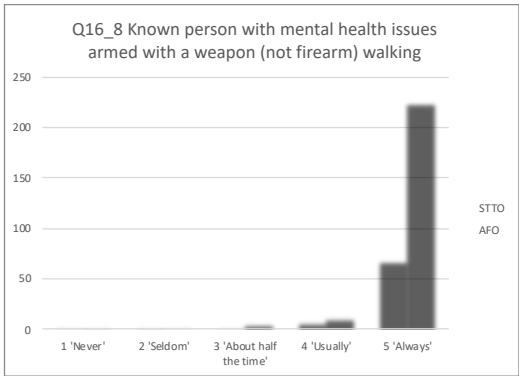
Q16_6 Known person with mental health issues pushing another individual in the chest	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Never'	0	0.236	1	0.764	1
2 'Seldom'	0	0.471	2	1.529	2
3 'About half the time'	0	4.478	19	14.522	19
4 'Usually'	9	11.076	38	35.924	47
5 'Always'	65	57.739	180	187.261	245
Total	74		240		314



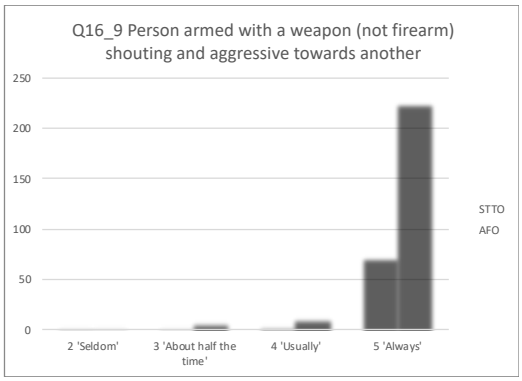
Q16_7 Person armed with a weapon (not firearm) walking	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Never'	0	0.236	1	0.764	1
2 'Seldom'	1	0.236	0	0.764	1
3 'About half the time'	0	1.178	5	3.822	5
4 'Usually'	6	4.478	13	14.522	19
5 'Always'	67	67.873	221	220.127	288
Total	74		240		314



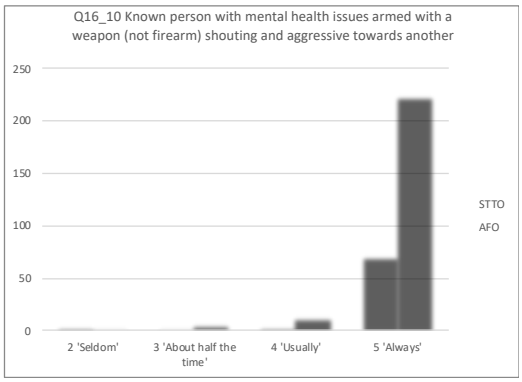
Q16_8 Known person with mental health issues armed with a weapon (not firearm) walking	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Never'	0	0.236	1	0.764	1
2 'Seldom'	1	0.236	0	0.764	1
3 'About half the time'	0	1.182	5	3.818	5
4 'Usually'	6	3.783	10	12.217	16
5 'Always'	67	68.562	223	221.438	290
Total	74		239		313



Q16_9 Person armed with a weapon (not firearm) shouting and aggressive towards another	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
2 'Seldom'	1	0.236	0	0.764	1
3 'About half the time'	0	1.414	6	4.586	6
4 'Usually'	2	2.828	10	9.172	12
5 'Always'	71	69.522	224	225.478	295
Total	74		240		314

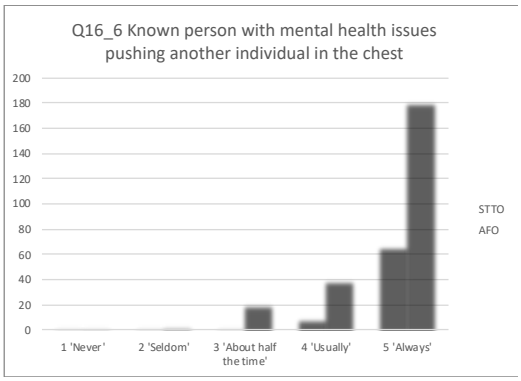


Q16_10 Known person with mental health issues armed with a weapon (not firearm) shouting and aggressive towards another	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
2 'Seldom'	2	0.471	0	1.529	2
3 'About half the time'	0	1.178	5	3.822	5
4 'Usually'	2	3.299	12	10.701	14
5 'Always'	70	69.051	223	223.949	293
Total	74		240		314

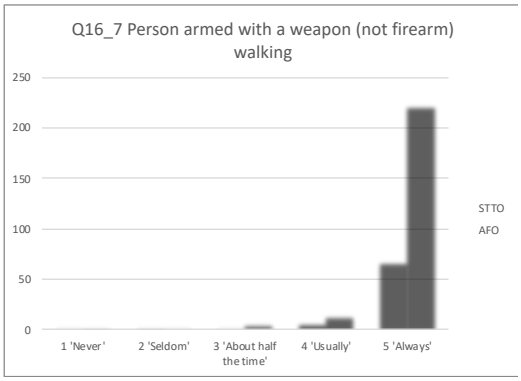


Appendix G- Survey Analysis Q16.

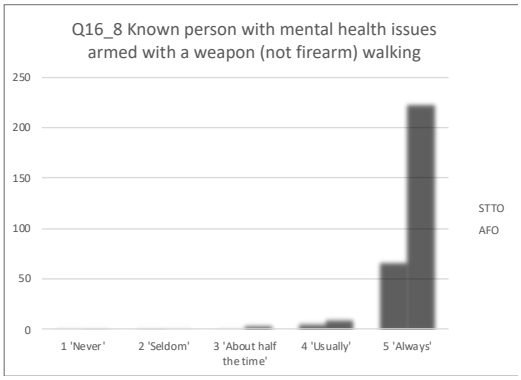
Q16_6 Known person with mental health issues pushing another individual in the chest	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Never'	0	0.236	1	0.764	1
2 'Seldom'	0	0.471	2	1.529	2
3 'About half the time'	0	4.478	19	14.522	19
4 'Usually'	9	11.076	38	35.924	47
5 'Always'	65	57.739	180	187.261	245
Total	74		240		314



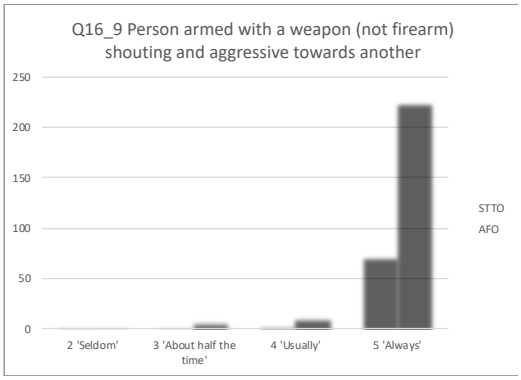
Q16_7 Person armed with a weapon (not firearm) walking	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Never'	0	0.236	1	0.764	1
2 'Seldom'	1	0.236	0	0.764	1
3 'About half the time'	0	1.178	5	3.822	5
4 'Usually'	6	4.478	13	14.522	19
5 'Always'	67	67.873	221	220.127	288
Total	74		240		314



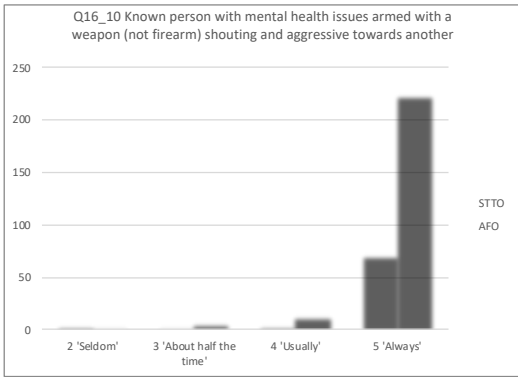
Q16_8 Known person with mental health issues armed with a weapon (not firearm) walking	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Never'	0	0.236	1	0.764	1
2 'Seldom'	1	0.236	0	0.764	1
3 'About half the time'	0	1.182	5	3.818	5
4 'Usually'	6	3.783	10	12.217	16
5 'Always'	67	68.562	223	221.438	290
Total	74		239		313



Q16_9 Person armed with a weapon (not firearm) shouting and aggressive towards another	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
2 'Seldom'	1	0.236	0	0.764	1
3 'About half the time'	0	1.414	6	4.586	6
4 'Usually'	2	2.828	10	9.172	12
5 'Always'	71	69.522	224	225.478	295
Total	74		240		314

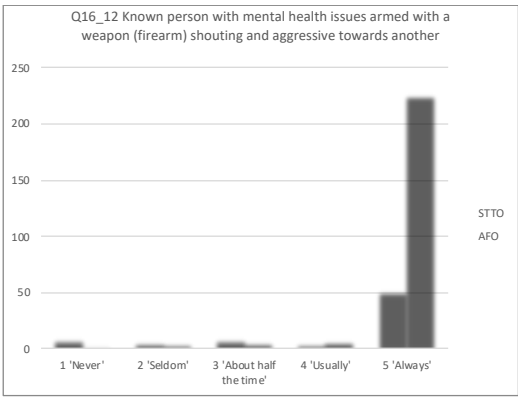


Q16_10 Known person with mental health issues armed with a weapon (not firearm) shouting and aggressive towards another	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
2 'Seldom'	2	0.471	0	1.529	2
3 'About half the time'	0	1.178	5	3.822	5
4 'Usually'	2	3.299	12	10.701	14
5 'Always'	70	69.051	223	223.949	293
Total	74		240		314

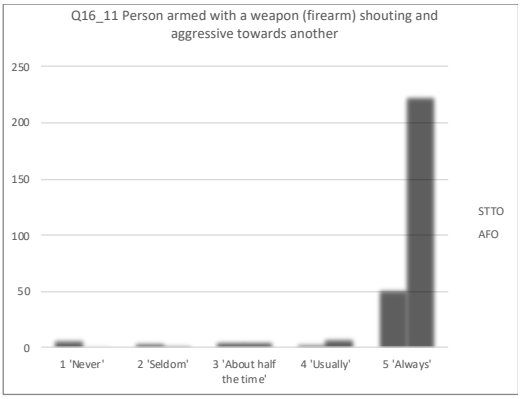


Appendix G- Survey Analysis Q16.

Q16_11 Person armed with a weapon (firearm) shouting and aggressive towards another	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Never'	7	1.655	0	5.345	7
2 'Seldom'	5	1.655	2	5.345	7
3 'About half the time'	6	2.837	6	9.163	12
4 'Usually'	4	2.837	8	9.163	12
5 'Always'	52	65.016	223	209.984	275
Total	74		239		313



Q16_12 Known person with mental health issues armed with a weapon (firearm) shouting and aggressive towards another	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Never'	7	1.660	0	5.340	7
2 'Seldom'	5	1.897	3	6.103	8
3 'About half the time'	7	2.846	5	9.154	12
4 'Usually'	4	2.372	6	7.628	10
5 'Always'	51	65.224	224	209.776	275
Total	74		238		312



		STTO				AFO				Total			
		Mean	N	Std. Deviation	Median	Mean	N	Std. Deviation	Median	Mean	N	Std. Deviation	Median
Q16_1	Person alone shouting	3.27	74	1.114	3	3.34	240	1.082	3	3.32	314	1.089	3
Q16_2	Known person with mental health issues, alone shouting	3.64	74	0.973	4	3.63	240	1.09	4	3.63	314	1.062	4
Q16_3	Person shouting at another person	4.09	74	0.830	4	4.03	239	0.97	4	4.04	313	0.938	4
Q16_4	Known person with mental health issues shouting at another individual	4.39	74	0.737	5	4.15	239	0.973	4	4.21	313	0.927	4
Q16_5	Person pushing another person in the chest	4.84	74	0.371	5	4.63	240	0.685	5	4.68	314	0.632	5
Q16_6	Known person with mental health issues pushing another individual in the chest	4.88	74	0.329	5	4.64	240	0.7	5	4.7	314	0.64	5
Q16_7	Person armed with a weapon (not firearm) walking	4.88	74	0.436	5	4.89	240	0.439	5	4.89	314	0.437	5
Q16_8	Known person with mental health issues armed with a weapon (not firearm) walking	4.88	74	0.436	5	4.9	239	0.428	5	4.89	313	0.429	5
Q16_9	Person armed with a weapon (not firearm) shouting and aggressive towards another	4.93	74	0.382	5	4.91	240	0.366	5	4.91	314	0.369	5
Q16_10	Known person with mental health issues armed with a weapon (not firearm) shouting and aggressive towards another	4.89	74	0.512	5	4.91	240	0.354	5	4.9	314	0.396	5
Q16_11	Person armed with a weapon (firearm) shouting and aggressive towards another	4.2	74	1.375	5	4.89	239	0.445	5	4.73	313	0.824	5
Q16_12	Known person with mental health issues armed with a weapon (firearm) shouting and aggressive towards another	4.18	74	1.378	5	4.89	238	0.461	5	4.72	312	0.838	5

Table 33. Q16 - Mean, Median and Standard Deviation for AFO and STTO.

Appendix G- Survey Analysis Q16.

		Significance level	
		Fishers	Chi-Sq
Q16_1	Person alone shouting	0.1404	NA
Q16_2	Known person with mental health issues, alone shouting	0.5610	NA
Q16_3	Person shouting at another person	0.7965	NA
Q16_4	Known person with mental health issues shouting at another individual	0.4692	NA
Q16_5	Person pushing another person in the chest	0.0730	NA
Q16_6	Known person with mental health issues pushing another individual in the chest	0.0311	NA
Q16_7	Person armed with a weapon (not firearm) walking	0.2416	NA
Q16_8	Known person with mental health issues armed with a weapon (not firearm) walking	0.1596	NA
Q16_9	Person armed with a weapon (not firearm) shouting and aggressive towards another	0.2010	NA
Q16_10	Known person with mental health issues armed with a weapon (not firearm) shouting and aggressive towards another	0.0718	NA
Q16_11	Person armed with a weapon (firearm) shouting and aggressive towards another	0.0000	NA
Q16_12	Known person with mental health issues armed with a weapon (firearm) shouting and aggressive towards another	0.0000	NA

Note: Chronbach Alpha =.836

Table 34. Q16 – Significance level results.

		Mann-Whitney U test			
		p-value	MW *U value*	Std test Stat *z*	Effect size *r*
Q16_1	Person alone shouting	0.520	9304	0.644	0.0363
Q16_2	Known person with mental health issues, alone shouting	0.796	9049	0.258	0.0146
Q16_3	Person shouting at another person	0.822	8698.5	-0.225	-0.0127
Q16_4	Known person with mental health issues shouting at another individual	0.113	7846.5	-1.585	-0.0896
Q16_5	Person pushing another person in the chest	0.026	7727	-2.229	-0.1258
Q16_6	Known person with mental health issues pushing another individual in the chest	0.012	7641	-2.513	-0.1418
Q16_7	Person armed with a weapon (not firearm) walking	0.696	9007.5	0.391	0.0221
Q16_8	Known person with mental health issues armed with a weapon (not firearm) walking	0.448	9076.5	0.759	0.0429
Q16_9	Person armed with a weapon (not firearm) shouting and aggressive towards another	0.415	8650	-0.815	-0.0460
Q16_10	Known person with mental health issues armed with a weapon (not firearm) shouting and aggressive towards another	0.643	8743	-0.463	-0.0261
Q16_11	Person armed with a weapon (firearm) shouting and aggressive towards another	0.000	10973	5.521	0.3121
Q16_12	Known person with mental health issues armed with a weapon (firearm) shouting and aggressive towards another	0.000	11096	6.019	0.3408

Table 35. Q16 – Mann-Whitney U test results.

Correlations Spearman's rho				Q16_1	Q16_2	Q16_3	Q16_4	Q16_5	Q16_6	Q16_7	Q16_8	Q16_9	Q16_10	Q16_11	Q16_12
STTO	Q16_1	Person alone shouting	Correlation Coefficient	1											
			Sig. (2-tailed)	.											
			N	74											
	Q16_2	Known person with mental health issues, alo	Correlation Coefficient	.662**	1										
			Sig. (2-tailed)	0	.										
			N	74	74										
	Q16_3	Person shouting at another person	Correlation Coefficient	.493**	.440**	1									
			Sig. (2-tailed)	0	0	.									
			N	74	74	74									
	Q16_4	Known person with mental health issues shou	Correlation Coefficient	0.21	.490**	.551**	1								
			Sig. (2-tailed)	0.073	0	0	.								
			N	74	74	74	74								
	Q16_5	Person pushing another person in the chest	Correlation Coefficient	0.214	0.211	.308**	.349**	1							
			Sig. (2-tailed)	0.067	0.071	0.008	0.002	.							
			N	74	74	74	74	74							
	Q16_6	Known person with mental health issues pust	Correlation Coefficient	.244*	.231*	.343**	.367**	.734**	1						
			Sig. (2-tailed)	0.036	0.048	0.003	0.001	0	.						
			N	74	74	74	74	74	74						
	Q16_7	Person armed with a weapon (not firearm) w	Correlation Coefficient	0.1	0.047	0.128	0.098	.240*	0.032	1					
			Sig. (2-tailed)	0.396	0.691	0.278	0.405	0.039	0.784	.					
			N	74	74	74	74	74	74	74					
	Q16_8	Known person with mental health issues arm	Correlation Coefficient	0.222	0.094	0.194	0.098	.240*	0.172	.847**	1				
			Sig. (2-tailed)	0.057	0.426	0.098	0.405	0.039	0.143	0	.				
			N	74	74	74	74	74	74	74	74				
	Q16_9	Person armed with a weapon (not firearm) sl	Correlation Coefficient	0.18	0.083	0.159	0.046	0.1	0.139	.649**	.649**	1			
			Sig. (2-tailed)	0.125	0.48	0.175	0.696	0.394	0.238	0	0	.			
			N	74	74	74	74	74	74	74	74	74			
	Q16_10	Known person with mental health issues arm	Correlation Coefficient	.230*	0.047	0.154	-0.016	0.061	.287*	.541**	.748**	.852**	1		
			Sig. (2-tailed)	0.048	0.692	0.191	0.895	0.604	0.013	0	0	0	.		
			N	74	74	74	74	74	74	74	74	74	74		
	Q16_11	Person armed with a weapon (firearm) shout	Correlation Coefficient	0.195	0.014	-0.058	-0.14	-0.186	-0.038	.303**	.331**	.331**	.384**	1	
			Sig. (2-tailed)	0.096	0.908	0.622	0.235	0.112	0.745	0.009	0.004	0.004	0.001	.	
			N	74	74	74	74	74	74	74	74	74	74	74	
	Q16_12	Known person with mental health issues arm	Correlation Coefficient	0.225	0.035	-0.023	-0.119	-0.126	0.032	.292*	.322**	.324**	.377**	.976**	1
			Sig. (2-tailed)	0.054	0.768	0.845	0.312	0.286	0.787	0.012	0.005	0.005	0.001	0	.
			N	74	74	74	74	74	74	74	74	74	74	74	74
AFO	Q16_1	Person alone shouting	Correlation Coefficient	1											
			Sig. (2-tailed)	.											
			N	240											
	Q16_2	Known person with mental health issues, alo	Correlation Coefficient	.727**	1										
			Sig. (2-tailed)	0	.										
			N	240	240										
	Q16_3	Person shouting at another person	Correlation Coefficient	.610**	.630**	1									
			Sig. (2-tailed)	0	0	.									
			N	239	239	239									
	Q16_4	Known person with mental health issues shou	Correlation Coefficient	.538**	.692**	.824**	1								
			Sig. (2-tailed)	0	0	0	.								
			N	239	239	239	239								
	Q16_5	Person pushing another person in the chest	Correlation Coefficient	.329**	.391**	.597**	.606**	1							
			Sig. (2-tailed)	0	0	0	0	.							
			N	240	240	239	239	240							
	Q16_6	Known person with mental health issues pust	Correlation Coefficient	.300**	.414**	.554**	.617**	.881**							
			Sig. (2-tailed)	0	0	0	0	0	.						
			N	240	240	239	239	240	240						
	Q16_7	Person armed with a weapon (not firearm) w	Correlation Coefficient	.130*	.157*	.245**	.230**	.406**	.425**	1					
			Sig. (2-tailed)	0.045	0.015	0	0	0	0	.					
			N	240	240	239	239	240	240	240					
	Q16_8	Known person with mental health issues arm	Correlation Coefficient	0.102	.153*	.235**	.251**	.397**	.415**	.942**	1				
			Sig. (2-tailed)	0.114	0.018	0	0	0	0	0	.				
			N	239	239	239	239	239	239	239	239				
	Q16_9	Person armed with a weapon (not firearm) sl	Correlation Coefficient	0.107	.214**	.199**	.408**	.427**	.785**	.758**	1				
			Sig. (2-tailed)	0.098	0.101	0.001	0.002	0	0	0	.				
			N	240	240	239	239	240	240	240	239	240			
	Q16_10	Known person with mental health issues arm	Correlation Coefficient	0.064	0.092	.172**	.154*	.355**	.374**	.768**	.740**	.841**	1		
			Sig. (2-tailed)	0.322	0.155	0.008	0.017	0	0	0	0	0	.		
			N	240	240	239	239	240	240	240	239	240	240		
	Q16_11	Person armed with a weapon (firearm) shout	Correlation Coefficient	0.033	0.058	.173**	.171**	.296**	.314**	.668**	.627**	.800**	.778**	1	
			Sig. (2-tailed)	0.615	0.374	0.007	0.008	0	0	0	0	0	0	.	
			N	239	239	238	239	239	239	239	238	239	239	239	
	Q16_12	Known person with mental health issues arm	Correlation Coefficient	0.006	0.022	.159*	.149*	.258**	.271**	.655**	.607**	.723**	.703**	.936**	1
			Sig. (2-tailed)	0.932	0.732	0.014	0.022	0	0	0	0	0	0	0	.
			N	238	238	237	237	238	238	238	237	238	238	238	238

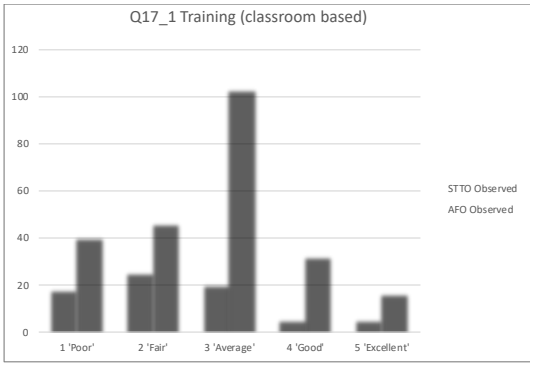
** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

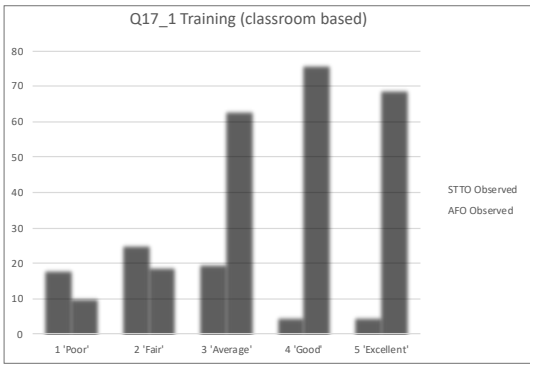
Table 36. Q16 Spearman's Correlation (r_s) results.

Appendix G- Survey Analysis Q17.

Q17_1 Training (classroom based)	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Poor'	18	17.865	40	44.342	58
2 'Fair'	25	21.869	46	54.281	71
3 'Average'	20	37.886	103	94.035	123
4 'Good'	5	11.397	32	28.287	37
5 'Excellent'	5	6.468	16	16.055	21
Total	73		237		310



Q17_2 Training (practical based)	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Poor'	7	5.236	10	12.997	17
2 'Fair'	11	9.241	19	22.935	30
3 'Average'	22	26.181	63	64.984	85
4 'Good'	22	30.186	76	74.923	98
5 'Excellent'	11	24.641	69	61.161	80
Total	73		237		310



		STTO				AFO				Total			
	AFO or STTO	Mean	N	Std. Dev	Median	Mean	N	Std. Dev	Median	Mean	N	Std. Dev	Median
Q17_1	Training (classroom based)	2.37	73	1.137	2	2.74	237	1.1	3	2.65	310	1.118	3
Q17_2	Training (practical based)	3.26	73	1.179	3	3.74	237	1.093	4	3.63	310	1.13	4

Table 37. Q17 - Mean, Median and Standard Deviation for AFO and STTO.

		Significance level	
	AFO or STTO	Fishers	Chi-Sq
Q17_1	Training (classroom based)	0.1404	NA
Q17_2	Training (practical based)	0.5610	NA

Note: Chronbach Alpha =.795

Table 38. Q16 – Significance level results.

		Mann-Whitney U test			
	AFO or STTO	*p-value*	MW *U value*	Std test Stat *z*	Effect size *r*
Q17_1	Training (classroom based)	0.005	10446	2.8	0.1590
Q17_2	Training (practical based)	0.002	10633	3.071	0.1744

Table 39. Q16 – Mann-Whitney U test results.

Appendix G- Survey Analysis Q17.

Correlations

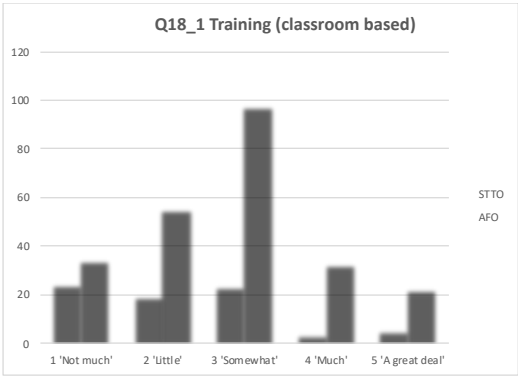
Spearman's rho				Q17_1	Q17_2
STTO	Q17_1	Training (classroom based)	Pearson Correlation	1	
			Sig. (2-tailed)		
			N	73	
	Q17_2	Training (practical based)	Pearson Correlation	.694**	1
			Sig. (2-tailed)	0	
			N	73	73
AFO	Q17_1	Training (classroom based)	Pearson Correlation	1	
			Sig. (2-tailed)		
			N	237	
	Q17_2	Training (practical based)	Pearson Correlation	.637**	1
			Sig. (2-tailed)	0	
			N	237	237

** Correlation is significant at the 0.01 level (2-tailed).

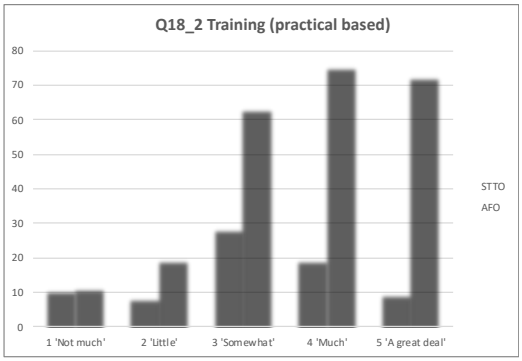
Table 40. Q17 Spearman's Correlation (r_s) results.

Appendix G- Survey Analysis Q18.

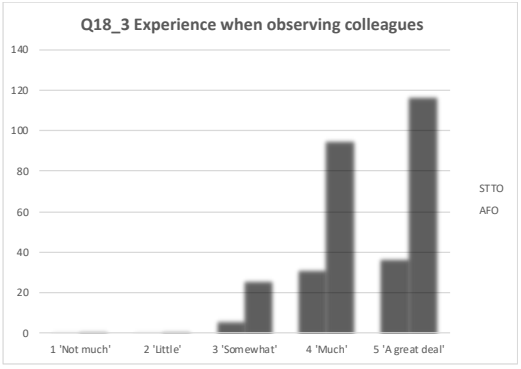
Q18_1 Training (classroom based)	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Not much'	24	13.669	34	44.331	58
2 'Little'	19	17.439	55	56.561	74
3 'Somewhat'	23	28.280	97	91.720	120
4 'Much'	3	8.248	32	26.752	35
5 'A great deal'	5	6.363	22	20.637	27
Total	74		240		314



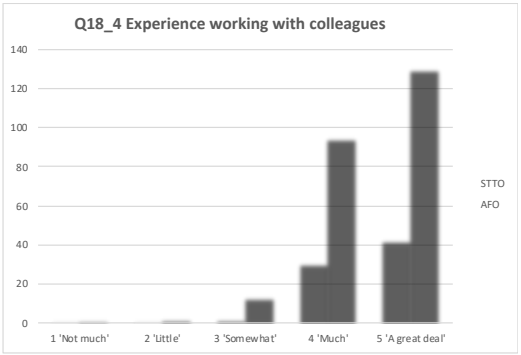
Q18_2 Training (practical based)	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Not much'	10	4.949	11	16.051	21
2 'Little'	8	6.363	19	20.637	27
3 'Somewhat'	28	21.446	63	69.554	91
4 'Much'	19	22.153	75	71.847	94
5 'A great deal'	9	19.089	72	61.911	81
Total	74		240		314



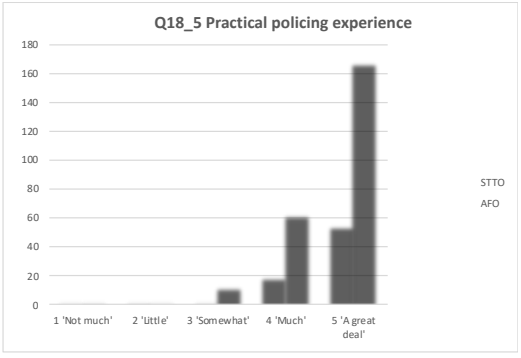
Q18_3 Experience when observing colleagues	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Not much'	0	0.236	1	0.764	1
2 'Little'	0	0.236	1	0.764	1
3 'Somewhat'	6	7.541	26	24.459	32
4 'Much'	31	29.694	95	96.306	126
5 'A great deal'	37	36.293	117	117.707	154
Total	74		240		314



Q18_4 Experience working with colleagues	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Not much'	0	0.236	1	0.764	1
2 'Little'	0	0.473	2	1.527	2
3 'Somewhat'	2	3.546	13	11.454	15
4 'Much'	30	29.316	94	94.684	124
5 'A great deal'	42	40.428	129	130.572	171
Total	74		239		313

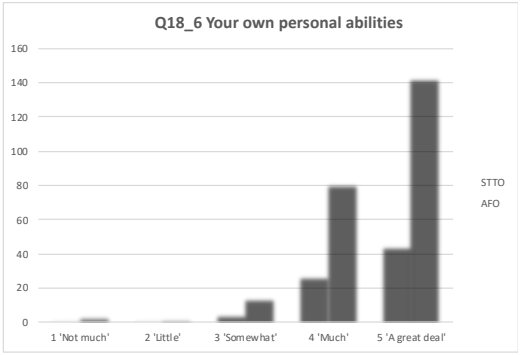


Q18_5 Practical policing experience	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Not much'	0	0.236	1	0.764	1
2 'Little'	1	0.236	0	0.764	1
3 'Somewhat'	1	2.837	11	9.163	12
4 'Much'	18	18.677	61	60.323	79
5 'A great deal'	54	52.013	166	167.987	220
Total	74		239		313

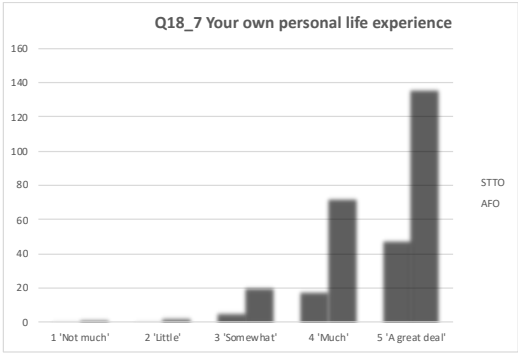


Appendix G- Survey Analysis Q18.

Q18_6 Your own personal abilities	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Not much'	0	0.707	3	2.293	3
2 'Little'	0	0.236	1	0.764	1
3 'Somewhat'	4	4.242	14	13.758	18
4 'Much'	26	24.981	80	81.019	106
5 'A great deal'	44	43.834	142	142.166	186
Total	74		240		314



Q18_7 Your own personal life experience	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Not much'	0	0.472	2	1.528	2
2 'Little'	0	0.708	3	2.292	3
3 'Somewhat'	6	6.138	20	19.862	26
4 'Much'	18	21.246	72	68.754	90
5 'A great deal'	48	43.436	136	140.564	184
Total	72		233		305



	AFO or STTO	STTO				AFO				Total			
		Mean	N	Std. Dev	Median	Mean	N	Std. Dev	Median	Mean	N	Std. Dev	Median
Q18_1	Training (classroom based)	2.27	74	1.162	2	2.8	240	1.124	3	2.68	314	1.154	3
Q18_2	Training (practical based)	3.12	74	1.182	3	3.74	240	1.109	4	3.6	314	1.155	4
Q18_3	Experience when observing colleagues	4.42	74	0.641	4.5	4.36	240	0.724	4	4.37	314	0.705	4
Q18_4	Experience working with colleagues	4.54	74	0.554	5	4.46	239	0.678	5	4.48	313	0.651	5
Q18_5	Practical policing experience	4.69	74	0.572	5	4.64	239	0.613	5	4.65	313	0.603	5
Q18_6	Your own personal abilities	4.54	74	0.601	5	4.49	240	0.737	5	4.5	314	0.707	5
Q18_7	Your own personal life experience	4.58	72	0.645	5	4.45	233	0.776	5	4.48	305	0.748	5

Table 41. Q18 - Mean, Median and Standard Deviation for AFO and STTO.

	AFO or STTO	Significance level	
		Fishers	Chi-Sq
Q18_1	Training (classroom based)	0.0032	0.00248
Q18_2	Training (practical based)	0.0012	NA
Q18_3	Experience when observing colleagues	0.9063	NA
Q18_4	Experience working with colleagues	0.8777	NA
Q18_5	Practical policing experience	0.3236	NA
Q18_6	Your own personal abilities	0.9914	NA
Q18_7	Your own personal life experience	0.7420	NA

Note: Chronbach Alpha =.795.

Table 42. Q18 – Significance level results.

	AFO or STTO	Mann-Whitney U test			
		p-value	MW *U value*	Std test Stat *z*	Effect size *r*
Q18_1	Training (classroom based)	0.000	11270	3.644	0.2056
Q18_2	Training (practical based)	0.000	11503.5	3.983	0.2248
Q18_3	Experience when observing colleagues	0.666	8614	-0.431	-0.0243
Q18_4	Experience working with colleagues	0.509	8448	-0.66	-0.0373
Q18_5	Practical policing experience	0.515	8489.5	-0.651	-0.0368
Q18_6	Your own personal abilities	0.855	8772	-0.182	-0.0103
Q18_7	Your own personal life experience	0.205	7668	-1.268	-0.0726

Table 43. Q18 – Mann-Whitney U test results.

Appendix G- Survey Analysis Q18.

Correlations

Spearman's rho				Q18_1	Q18_2	Q18_3	Q18_4	Q18_5	Q18_6	Q18_7
STTO	Q18_1	Training (classroom based)	Correlation Coefficient	1	.702**					
			Sig. (2-tailed)	.	0					
			N	74	74					
	Q18_2	Training (practical based)	Correlation Coefficient	.702**	1	.347**				
			Sig. (2-tailed)	0	.	0.002				
			N	74	74	74				
	Q18_3	Experience when observing colleagues	Correlation Coefficient	0.205	.347**	1	.851**			
			Sig. (2-tailed)	0.08	0.002	.	0			
			N	74	74	74	74			
	Q18_4	Experience working with colleagues	Correlation Coefficient	0.035	0.221	.851**	1	.362**		
			Sig. (2-tailed)	0.767	0.059	0	.	0.002		
			N	74	74	74	74	74		
	Q18_5	Practical policing experience	Correlation Coefficient	0.224	0.207	.508**	.362**	1	.320**	
			Sig. (2-tailed)	0.055	0.077	0	0.002	.	0.005	
			N	74	74	74	74	74	74	
	Q18_6	Your own personal abilities	Correlation Coefficient	0.217	0.203	0.072	-0.033	.320**	1	.837**
			Sig. (2-tailed)	0.063	0.083	0.544	0.779	0.005	.	0
			N	74	74	74	74	74	74	72
	Q18_7	Your own personal life experience	Correlation Coefficient	0.134	0.078	-0.018	-0.064	.256*	.837**	1
			Sig. (2-tailed)	0.263	0.516	0.878	0.594	0.03	0	.
			N	72	72	72	72	72	72	72
AFO	Q18_1	Training (classroom based)	Correlation Coefficient	1	.639**					
			Sig. (2-tailed)	.	0					
			N	240	240					
	Q18_2	Training (practical based)	Correlation Coefficient	.639**	1	.361**				
			Sig. (2-tailed)	0	.	0				
			N	240	240	240				
	Q18_3	Experience when observing colleagues	Correlation Coefficient	.229**	.361**	1	.833**			
			Sig. (2-tailed)	0	0	.	0			
			N	240	240	240	239			
	Q18_4	Experience working with colleagues	Correlation Coefficient	.129*	.278**	.833**	1	.545**		
			Sig. (2-tailed)	0.047	0	0	.	0		
			N	239	239	239	239	238		
	Q18_5	Practical policing experience	Correlation Coefficient	-0.018	0.106	.474**	.545**	1	.568**	
			Sig. (2-tailed)	0.777	0.103	0	0	.	0	
			N	239	239	239	238	239	239	
	Q18_6	Your own personal abilities	Correlation Coefficient	0.059	0.055	.305**	.308**	.568**	1	.721**
			Sig. (2-tailed)	0.363	0.395	0	0	0	.	0
			N	240	240	240	239	239	240	233
	Q18_7	Your own personal life experience	Correlation Coefficient	0.108	0.087	.208**	.192**	.423**	.721**	1
			Sig. (2-tailed)	0.101	0.188	0.001	0.003	0	0	.
			N	233	233	233	232	232	233	233

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 44. Q18 Spearman's Correlation (r_s) results.

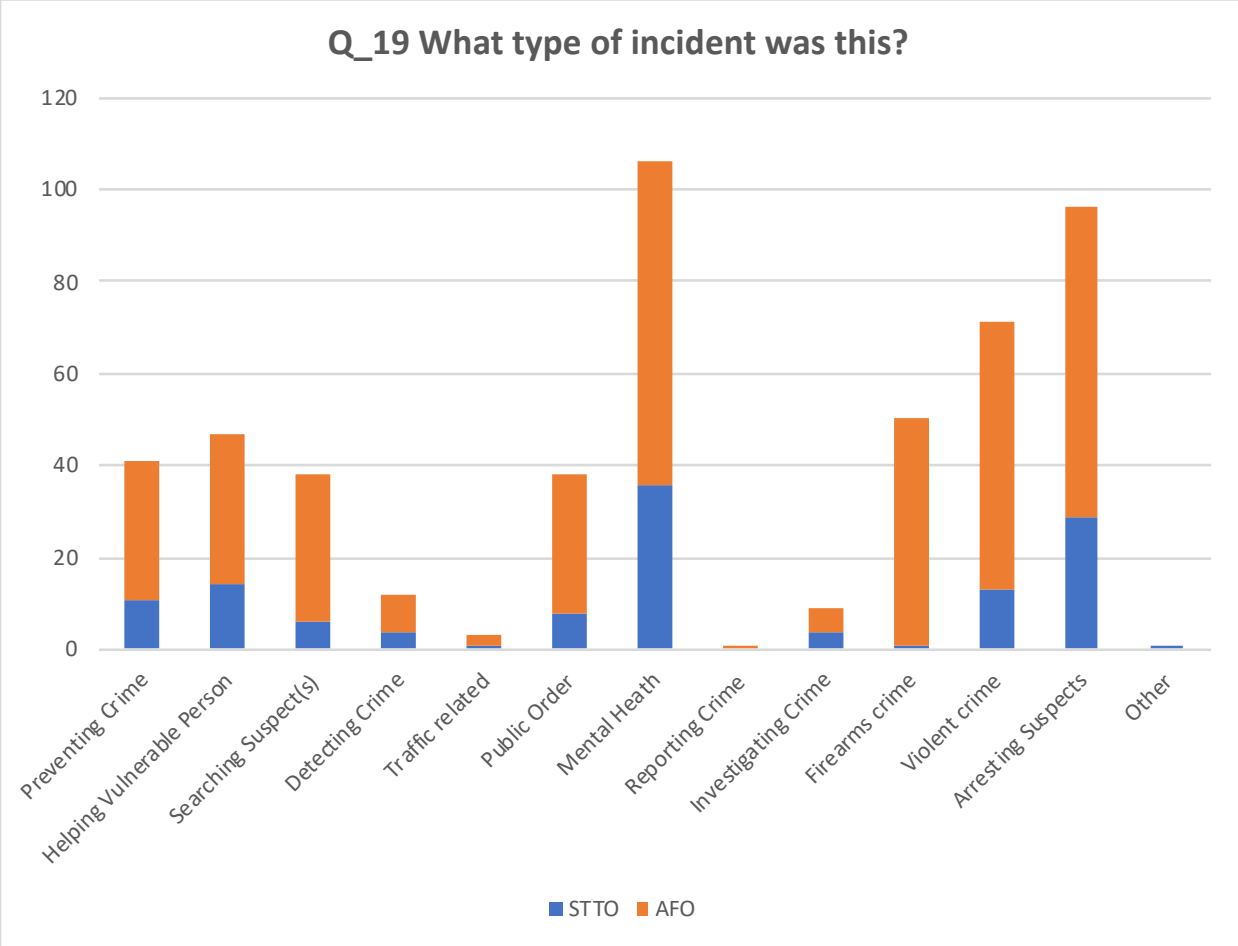
Appendix G- Survey Analysis Q19.

Q19 What type of incident was this?

		STTO		AFO		2 (Fishers)	Total
		Observed	*Expected*	*Observed*	*Expected*		
Q19_1	Preventing Crime	11	9.632	30	31.368	0.292	41
Q19_2	Helping Vulnerable Person	14	11.041	33	35.959	1.218	47
Q19_3	Searching Suspect(s)	6	8.927	32	29.073	1.426	38
Q19_4	Detecting Crime	4	2.819	8	9.181	(0.486)	12
Q19_5	Traffic related	1	0.705	2	2.295	(0.553)	3
Q19_6	Public Order	8	8.927	30	29.073	0.143	38
Q19_7	Mental Heath	36	24.902	70	81.098	9.744**	106
Q19_8	Reporting Crime	0	0.235	1	0.765	(1)	1
Q19_9	Investigating Crime	4	2.114	5	6.886	(0.222)	9
Q19_10	Firearms crime	1	11.746	49	38.254	13.886***	50
Q19_11	Violent crime	13	16.679	58	54.321	1.37	71
Q19_12	Arresting Suspects	29	22.552	67	73.448	3.466	96
Q19_13	Other	1	0.235	0	0.765	0.308	1

* p < .05. ** *p* < .01. *** p < .001.

Table 45. Q19_a STTO/ AFO responses.

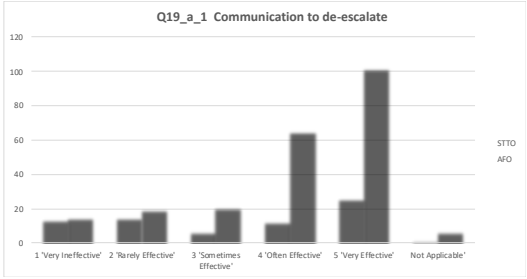


Note: *n*=315

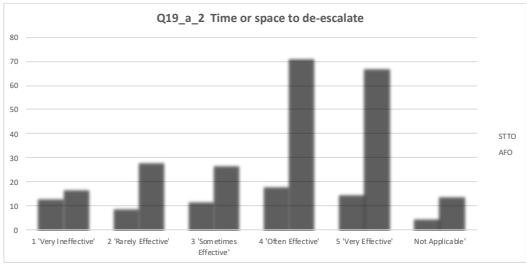
Chart 13. Q19 What type of incident was this?

Appendix G- Survey Analysis Q19_a.

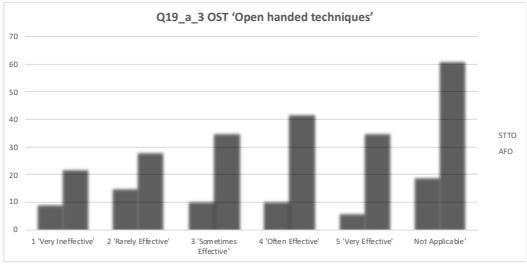
Q19_a_1 Communication to de-escalate	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very Ineffective'	13	6.498	14	20.502	27
2 'Rarely Effective'	14	7.942	19	25.058	33
3 'Sometimes Effective'	6	6.258	20	19.742	26
4 'Often Effective'	12	18.292	64	57.708	76
5 'Very Effective'	25	30.325	101	95.675	126
Not Applicable'	1	1.685	6	5.315	7
Total	71		224		295



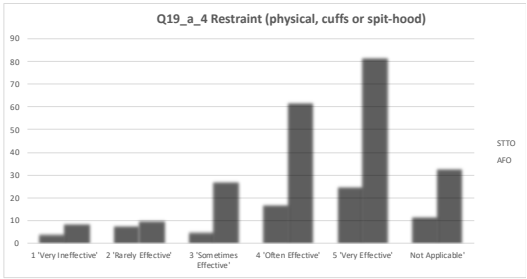
Q19_a_2 Time or space to de-escalate	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very Ineffective'	13	7.297	17	22.703	30
2 'Rarely Effective'	9	9.000	28	28.000	37
3 'Sometimes Effective'	12	9.486	27	29.514	39
4 'Often Effective'	18	21.649	71	67.351	89
5 'Very Effective'	15	19.946	67	62.054	82
Not Applicable'	5	4.622	14	14.378	19
Total	72		224		296



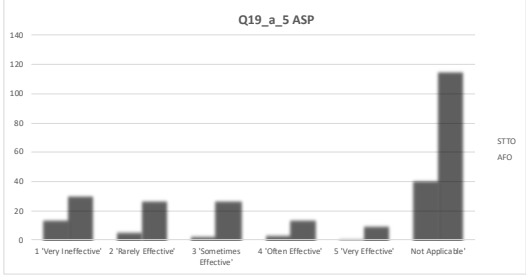
Q19_a_3 OST 'Open handed techniques'	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very Ineffective'	9	7.325	22	23.675	31
2 'Rarely Effective'	15	10.161	28	32.839	43
3 'Sometimes Effective'	10	10.634	35	34.366	45
4 'Often Effective'	10	12.288	42	39.712	52
5 'Very Effective'	6	9.688	35	31.312	41
Not Applicable'	19	18.904	61	61.096	80
Total	69		223		292



Q19_a_4 Restraint (physical, cuffs or spit-hood)	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very Ineffective'	4	3.139	9	3.139	13
2 'Rarely Effective'	8	4.347	10	4.347	18
3 'Sometimes Effective'	5	7.728	27	7.728	32
4 'Often Effective'	17	19.078	62	19.078	79
5 'Very Effective'	25	25.840	82	25.840	107
Not Applicable'	12	10.867	33	10.867	45
Total	71		223		294

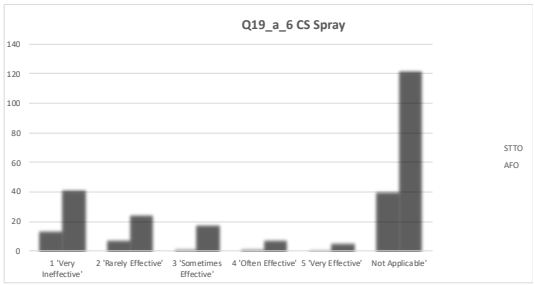


Q19_a_5 ASP	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very Ineffective'	14	10.397	30	33.603	44
2 'Rarely Effective'	6	7.798	27	25.202	33
3 'Sometimes Effective'	3	7.089	27	22.911	30
4 'Often Effective'	4	4.253	14	13.747	18
5 'Very Effective'	1	2.599	10	8.401	11
Not Applicable'	41	36.863	115	119.137	156
Total	69		223		292

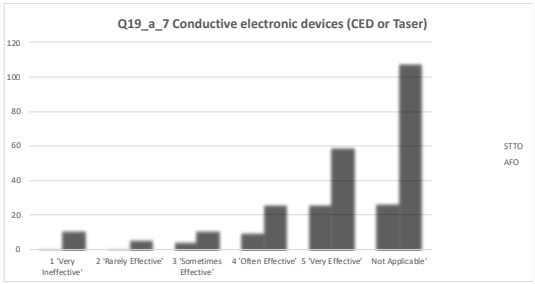


Appendix G- Survey Analysis Q19_a.

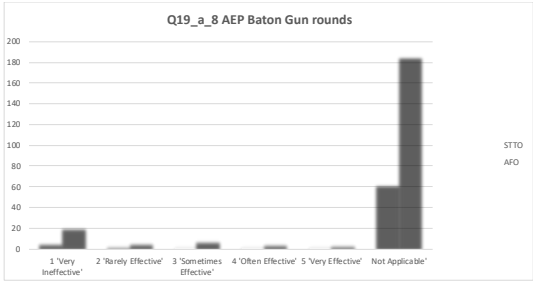
Q19_a_6 CS Spray	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very Ineffective'	14	13.028	42	42.972	56
2 'Rarely Effective'	8	7.677	25	25.323	33
3 'Sometimes Effective'	2	4.653	18	15.347	20
4 'Often Effective'	2	2.326	8	7.674	10
5 'Very Effective'	1	1.628	6	5.372	7
Not Applicable'	40	37.688	122	124.313	162
Total	67		221		288



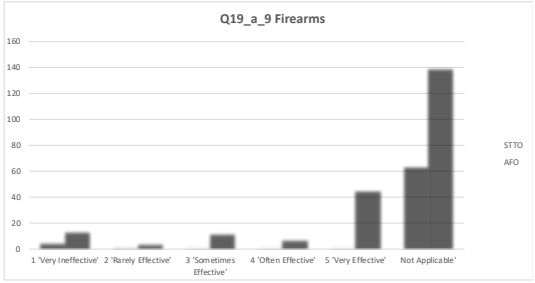
Q19_a_7 Conductive electronic devices (Taser)	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very Ineffective'	1	2.887	11	9.113	12
2 'Rarely Effective'	1	1.684	6	5.316	7
3 'Sometimes Effective'	5	3.849	11	12.151	16
4 'Often Effective'	10	8.660	26	27.340	36
5 'Very Effective'	26	20.447	59	64.553	85
Not Applicable'	27	32.474	108	102.526	135
Total	70		221		291



Q19_a_8 AEP Baton Gun rounds	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very Ineffective'	5	5.671	19	18.329	24
2 'Rarely Effective'	2	1.654	5	5.346	7
3 'Sometimes Effective'	0	1.654	7	5.346	7
4 'Often Effective'	0	0.945	4	3.055	4
5 'Very Effective'	0	0.709	3	2.291	3
Not Applicable'	62	58.366	185	188.634	247
Total	69		223		292



Q19_a_9 Firearms	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Very Ineffective'	5	4.283	13	13.717	18
2 'Rarely Effective'	1	1.190	4	3.810	5
3 'Sometimes Effective'	0	2.855	12	9.145	12
4 'Often Effective'	0	1.666	7	5.334	7
5 'Very Effective'	0	10.707	45	34.293	45
Not Applicable'	63	48.300	140	154.700	203
Total	69		221		290



Appendix G- Survey Analysis Q19_a.

AFO or STTO		Significance level	
		Fishers	Chi-Sq
Q19_a_1	Communication to de-escalate	0.0027	NA
Q19_a_2	Time or space to de-escalate	0.1096	NA
Q19_a_3	OST 'Open handed techniques'	0.3218	NA
Q19_a_4	Restraint (physical, cuffs or spit-hood)	0.3067	NA
Q19_a_5	ASP	0.2228	NA
Q19_a_6	CS Spray	0.8074	NA
Q19_a_7	Conductive electronic devices (Taser)	0.3246	NA
Q19_a_8	AEP Baton Gun rounds	0.6114	NA
Q19_a_9	Firearms	0.0000	NA

Note: Chronbach Alpha =.78

Table 46. Q19_a Significance level results.

		STTO					AFO					Total				
		Mean	N	Std. Dev	Median	Grouped Median	Mean	N	Std. Dev	Median	Grouped Median	Mean	N	Std. Dev	Median	Grouped Median
Q19_a_1	Communication to de-escalate	3.35	71	1.596	4	3.61	4.06	224	1.246	4	4.33	3.89	295	1.369	4	4.23
Q19_a_2	Time or space to de-escalate	3.39	72	1.561	4	3.53	3.83	224	1.353	4	4.07	3.72	296	1.416	4	3.96
Q19_a_3	OST 'Open handed techniques'	3.67	69	1.82	4	3.55	4	223	1.677	4	4.14	3.92	292	1.714	4	4.02
Q19_a_4	Restraint (physical, cuffs or spit-hood)	4.23	71	1.426	5	4.48	4.33	223	1.233	5	4.48	4.31	294	1.281	5	4.48
Q19_a_5	ASP	4.38	69	2.129	6	5.33	4.31	223	1.961	6	5.14	4.33	292	1.998	6	5.19
Q19_a_6	CS Spray	4.31	67	2.183	6	5.34	4.25	221	2.106	6	5.23	4.27	288	2.12	6	5.25
Q19_a_7	Conductive electronic devices (Taser)	5	70	1.09	5	5.19	4.99	221	1.362	5	5.32	4.99	291	1.3	5	5.29
Q19_a_8	AEP Baton Gun rounds	5.52	69	1.441	6	5.56	5.34	223	1.56	6	5.8	5.38	292	1.532	6	5.82
Q19_a_9	Firearms	5.58	69	1.376	6	5.63	5.2	221	1.398	6	5.56	5.29	290	1.4	6	5.65

Table 47. Q19_a - Mean, Median and Standard Deviation for STTO and STTO.

AFO or STTO		Mann-Whitney U test			
		p-value	MW *U value*	Std test Stat *z*	Effect size *r*
Q19_a_1	Communication to de-escalate	0.002	9797.5	3.102	0.181
Q19_a_2	Time or space to de-escalate	0.034	9369.0	2.124	0.123
Q19_a_3	OST 'Open handed techniques'	0.186	8488.5	1.322	0.077
Q19_a_4	Restraint (physical, cuffs or spit-hood)	0.852	8028.5	0.186	0.011
Q19_a_5	ASP	0.668	7452.0	-0.430	-0.025
Q19_a_6	CS Spray	0.777	7251.0	-0.283	-0.017
Q19_a_7	Conductive electronic devices (CED or Ta	0.371	8248.0	0.895	0.052
Q19_a_8	AEP Baton Gun rounds	0.205	7205.5	-1.268	-0.074
Q19_a_9	Firearms	0.000	5688.5	-3.940	-0.231

Table 48. Q19_a – Mann-Whitney U test results.

Correlations

				Q19_a_1	Q19_a_2	Q19_a_3	Q19_a_4	Q19_a_5	Q19_a_6	Q19_a_7	Q19_a_8	Q19_a_9
STTO	Spearman's rho	Communication to de-escalate	Correlation Coefficient	1								
			Sig. (2-tailed)	.								
			N	71								
	Q19_a_2	Time or space to de-escalate	Correlation Coefficient	.608**	1							
			Sig. (2-tailed)	0	.							
			N	71	72							
	Q19_a_3	OST 'Open handed techniques'	Correlation Coefficient	.347**	.290*	1						
			Sig. (2-tailed)	0.003	0.015	.						
			N	69	69	69						
	Q19_a_4	Restraint (physical, cuffs or spit-hood)	Correlation Coefficient	0.235	0.18	.451**	1					
			Sig. (2-tailed)	0.052	0.135	0	.					
			N	69	70	69	71					
	Q19_a_5	ASP	Correlation Coefficient	-0.004	0.095	.362**	.246*	1				
			Sig. (2-tailed)	0.974	0.436	0.002	0.042	.				
			N	69	69	69	69	69				
	Q19_a_6	CS Spray	Correlation Coefficient	0.006	0.159	.372**	0.235	.818**	1			
			Sig. (2-tailed)	0.96	0.199	0.002	0.055	0	.			
			N	67	67	67	67	67	67			
	Q19_a_7	Conductive electronic devices (CED or Taser)	Correlation Coefficient	0.055	0.143	0.061	0.11	.345**	.289*	1		
			Sig. (2-tailed)	0.653	0.239	0.622	0.368	0.004	0.019	.		
			N	69	70	68	69	68	66	70		
	Q19_a_8	AEP Baton Gun rounds	Correlation Coefficient	-0.171	0.016	0.125	0.163	.418**	.469**	.358**	1	
			Sig. (2-tailed)	0.16	0.895	0.308	0.181	0	0	0.003	.	
			N	69	69	69	69	69	67	68	69	
	Q19_a_9	Firearms	Correlation Coefficient	-0.195	-0.052	0.06	0.109	.369**	.422**	.368**	.930**	1
			Sig. (2-tailed)	0.108	0.673	0.624	0.374	0.002	0	0.002	0	.
			N	69	69	69	69	69	67	68	69	69
AFO	Q19_a_1	Communication to de-escalate	Correlation Coefficient	1								
			Sig. (2-tailed)	.								
			N	224								
	Q19_a_2	Time or space to de-escalate	Correlation Coefficient	.626**	1							
			Sig. (2-tailed)	0	.							
			N	224	224							
	Q19_a_3	OST 'Open handed techniques'	Correlation Coefficient	0.111	.273**	1						
			Sig. (2-tailed)	0.097	0	.						
			N	223	223	223						
	Q19_a_4	Restraint (physical, cuffs or spit-hood)	Correlation Coefficient	0.13	.156*	.553**	1					
			Sig. (2-tailed)	0.053	0.02	0	.					
			N	223	223	223	223					
	Q19_a_5	ASP	Correlation Coefficient	-0.075	0.074	.463**	.318**	1				
			Sig. (2-tailed)	0.265	0.272	0	0	.				
			N	223	223	223	223	223				
	Q19_a_6	CS Spray	Correlation Coefficient	-0.073	0.053	.388**	.360**	.826**	1			
			Sig. (2-tailed)	0.279	0.43	0	0	0	.			
			N	221	221	221	221	221	221			
	Q19_a_7	Conductive electronic devices (CED or Taser)	Correlation Coefficient	-0.019	0.114	.239**	.191**	.414**	.503**	1		
			Sig. (2-tailed)	0.777	0.092	0	0.004	0	0	.		
			N	221	221	221	221	221	219	221		
	Q19_a_8	AEP Baton Gun rounds	Correlation Coefficient	-0.021	0.059	.213**	.197**	.419**	.481**	.481**	1	
			Sig. (2-tailed)	0.76	0.381	0.001	0.003	0	0	0	.	
			N	223	223	223	223	223	221	221	223	
	Q19_a_9	Firearms	Correlation Coefficient	-0.098	0.011	.149*	0.119	.346**	.413**	.557**	.556**	1
			Sig. (2-tailed)	0.144	0.869	0.027	0.079	0	0	0	0	.
			N	221	221	220	220	220	218	218	220	221

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 49. Q19_a Spearman's Correlation (r_s) results.

Appendix G- Survey Analysis Q20.

Q20. What type of incident was this?		Unarmed		AFO		2 (Fishers)	Total
		n	%	n	%		
Q20_1	Preventing Crime	8	11%	22	9%	0.186	30
Q20_2	Helping Vulnerable Person	10	14%	26	11%	0.415	36
Q20_3	Searching Suspect(s)	7	9%	35	15%	1.256	42
Q20_4	Detecting Crime	1	1%	5	2%	(0.33)	6
Q20_5	Traffic related	1	1%	9	4%	(1)	10
Q20_6	Public Order	14	19%	56	23%	0.611	70
Q20_7	Mental Heath	24	32%	55	23%	2.783	79
Q20_8	Reporting Crime	0	0%	5	2%	(0.595)	5
Q20_9	Investigating Crime	2	3%	8	3%	(1)	10
Q20_10	Firearms crime	1	1%	18	7%	(0.054)	19
Q20_11	Violent crime	11	15%	35	15%	0.005**	46
Q20_12	Arresting Suspects	25	34%	56	23%	3.297	81

Note: ** p < .01.

Table 50. Q20 STTO/AFO responses.

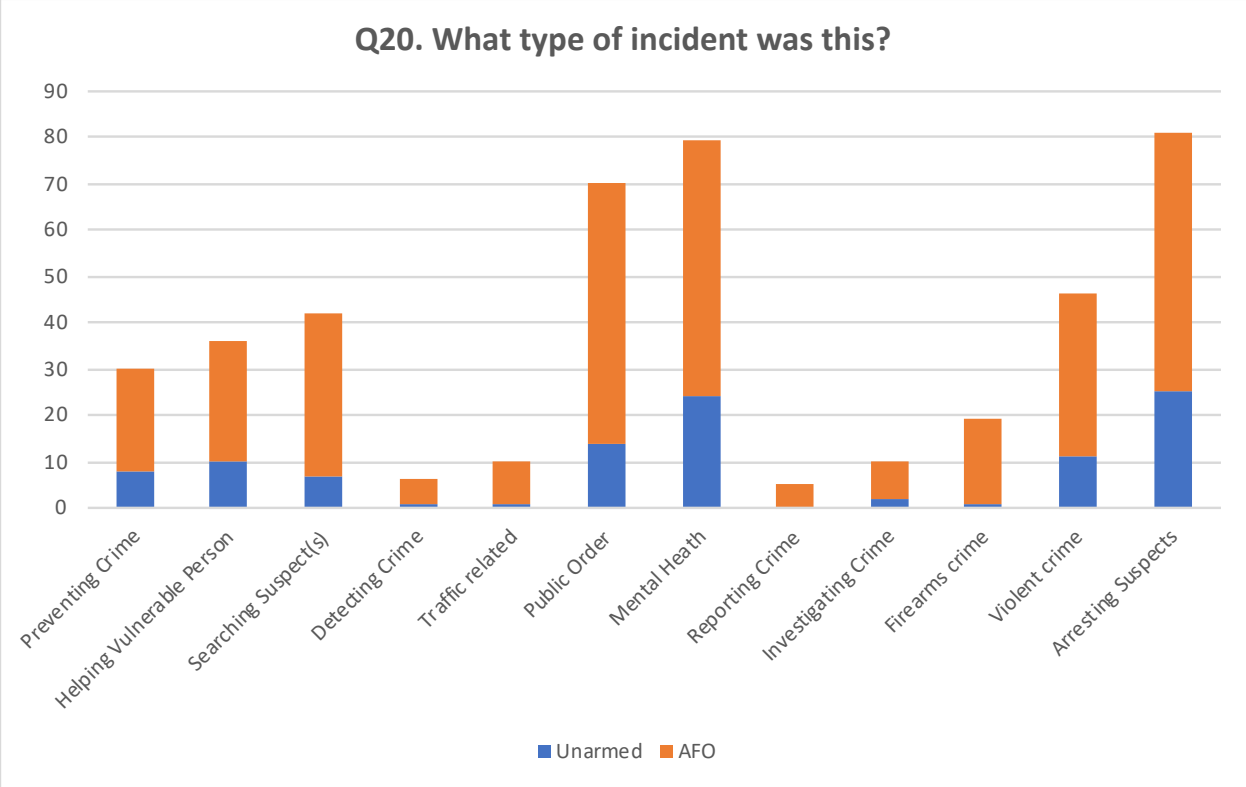


Chart 14. Q20 What type of incident was this?

Q20_a. Ineffective conflict resolution - tactics by group/ order of use

	Comms	Comms	Time/ space	Time/ space	OST	OST	Restraint	Restraint	ASP	ASP	CS Spray	CS Spray	TASER	TASER	Baton Gun	Baton Gun	Firearms	Firearms
Order of use	Unarmed	AFO	Unarmed	AFO	Unarmed	AFO	Unarmed	AFO	Unarmed	AFO	Unarmed	AFO	Unarmed	AFO	Unarmed	AFO	Unarmed	AFO
1	54	173	14	43	10	25	12	27	1	9	2	8	1	6	0	9	0	0
2	9	20	19	81	10	39	20	36	2	9	4	7	6	9	0	5	0	0
3	0	2	0	5	11	24	9	42	0	14	4	11	8	17	1	3	1	1
4	0	4	2	4	3	15	9	24	4	5	2	9	4	8	0	2	0	0
5	0	3	0	0	2	4	3	12	1	2	1	3	2	5	0	0	0	0
6	0	0	0	0	0	1	0	4	1	3	0	0	0	0	0	1	0	0
7	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

Note: N=315 (Unarmed n=70, AFO n=215). Chronbach Alpha =.903.

Table 51. Q20_a Ineffective conflict resolution.

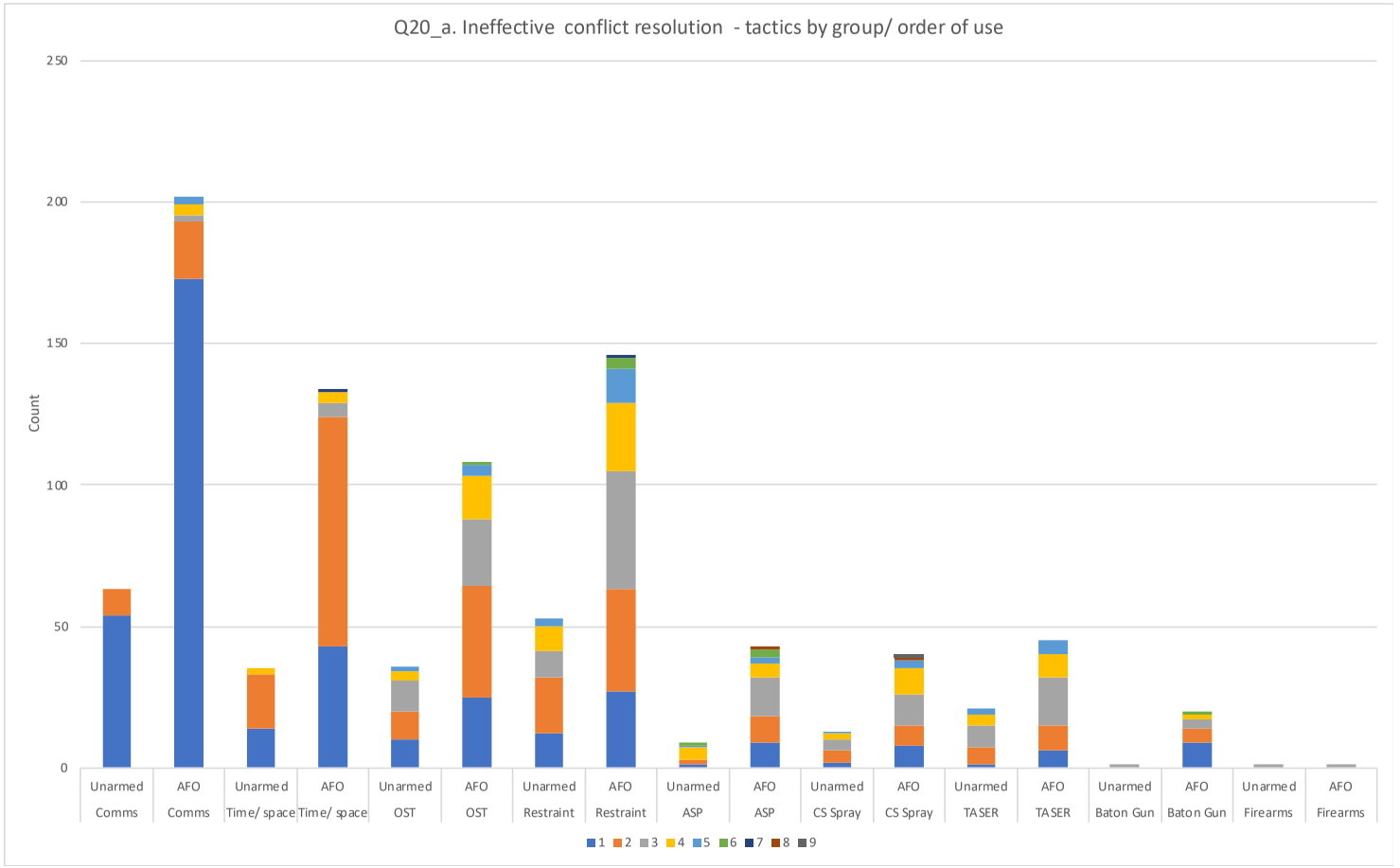
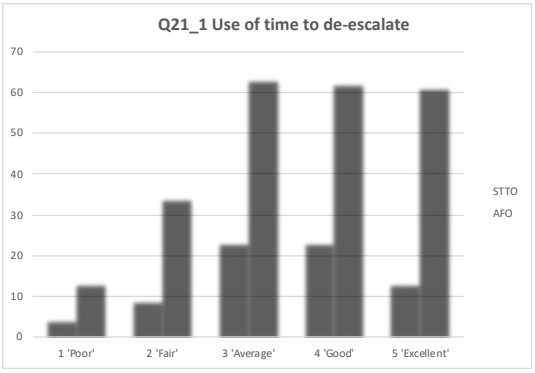


Chart 15. Q20_a Ineffective conflict resolution.

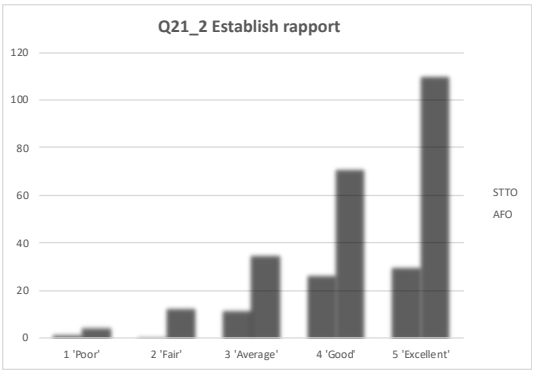
Note: N=315 (Unarmed n=70, AFO n=215).

Appendix G- Survey Analysis Q21.

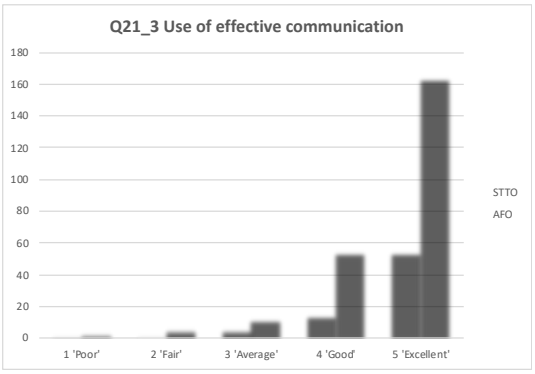
Q21_1 Use of time to de-escalate	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Poor'	4	4.013	13	12.987	17
2 'Fair'	9	10.151	34	32.849	43
3 'Average'	23	20.302	63	65.698	86
4 'Good'	23	20.066	62	64.934	85
5 'Excellent'	13	17.469	61	56.531	74
Total	72		233		305



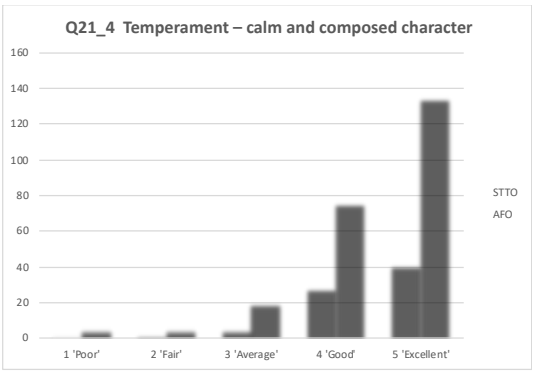
Q21_2 Establish rapport	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Poor'	2	1.647	5	5.353	7
2 'Fair'	1	3.294	13	10.706	14
3 'Average'	12	11.059	35	35.941	47
4 'Good'	27	23.059	71	74.941	98
5 'Excellent'	30	32.941	110	107.059	140
Total	72		234		306



Q21_3 Use of effective communication	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Poor'	1	0.713	2	2.287	3
2 'Fair'	0	1.189	5	3.811	5
3 'Average'	5	3.805	11	12.195	16
4 'Good'	14	15.932	53	51.068	67
5 'Excellent'	53	51.362	163	164.638	216
Total	73		234		307

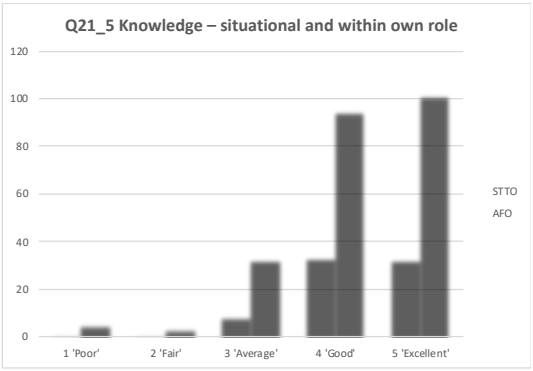


Q21_4 Temperament – calm and composed character	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Poor'	0	0.945	4	3.055	4
2 'Fair'	1	1.181	4	3.819	5
3 'Average'	4	5.434	19	17.566	23
4 'Good'	28	24.333	75	78.667	103
5 'Excellent'	40	41.107	134	132.893	174
Total	73		236		309



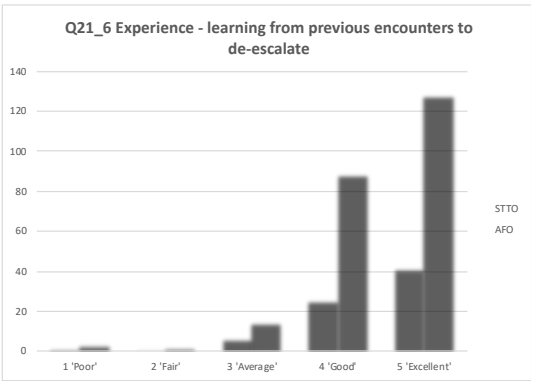
Appendix G- Survey Analysis Q21.

Q21_5 Knowledge – situational and within own	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Poor'	0	1.185	5	3.815	5
2 'Fair'	0	0.711	3	2.289	3
3 'Average'	8	9.481	32	30.519	40
4 'Good'	33	30.101	94	96.899	127
5 'Excellent'	32	31.523	101	101.477	133
Total	73		235		308

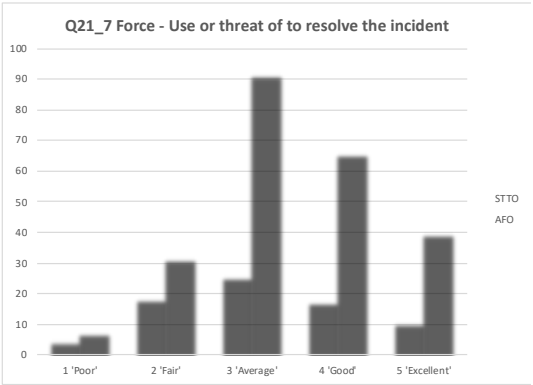


Q21_6 Experience - learning from previous encounters to de-escalate	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Poor'	1	0.948	3	3.052	4
2 'Fair'	0	0.474	2	1.526	2
3 'Average'	6	4.740	14	15.260	20
4 'Good'	25	26.782	88	86.218	113
5 'Excellent'	41	40.055	128	128.945	169
Total	73		235		308

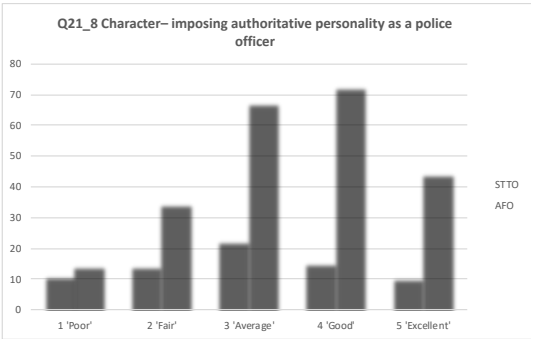
The initial Chronbach Alpha score ∝ =0.641, therefore Question 21_7 was removed from further analysis to increase ∝= 0.705 for this set of questions.



Q21_7 Force - Use or threat of to resolve the incident	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Poor'	4	2.651	7	8.349	11
2 'Fair'	18	11.811	31	37.189	49
3 'Average'	25	27.961	91	88.039	116
4 'Good'	17	19.765	65	62.235	82
5 'Excellent'	10	11.811	39	37.189	49
Total	74		233		307



Q21_8 Character– imposing authoritative personality	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
1 'Poor'	11	5.941	14	19.059	25
2 'Fair'	14	11.406	34	36.594	48
3 'Average'	22	21.149	67	67.851	89
4 'Good'	15	20.673	72	66.327	87
5 'Excellent'	10	12.832	44	41.168	54
Total	72		231		303



Appendix G- Survey Analysis Q21.

		AFO or Non AFO					
	AFO or NonAFO	Significance level		Mann-Whitney U test			
		Fishers	Chi-Sq	*p-value*	MW *U value*	Std test Stat *z*	Effect size *r*
Q21_1	Use of time to de-escalate	0.6055	NA	0.517	8799	0.649	0.0372
Q21_2	Establish rapport	0.4605	NA	0.717	8646	0.363	0.0208
Q21_3	Use of effective communication	0.6202	NA	0.667	8313	-0.43	-0.0245
Q21_4	Temperament – calm and composed char	0.7809	NA	0.962	8586	-0.047	-0.0027
Q21_5	Knowledge – situational and within own r	0.7210	NA	0.524	8188	-0.637	-0.0363
Q21_6	Experience - learning from previous encou	0.9072	NA	0.889	8495	-0.139	-0.0079
Q21_8	Character– imposing authoritative person	0.0621	NA	0.008**	9793	2.632	0.1512

Note: ** p < .01.Chronbach Alpha =.828

Table 52. Q21 – Mann-Whitney U test results.

		STTO					AFO					Total				
		Mean	N	Std. Dev	Median	Grouped Median	Mean	N	Std. Dev	Median	Grouped Median	Mean	N	Std. Dev	Median	Grouped Median
Q21_1	Use of time to de-escalate	3.44	72	1.099	3.5	3.5	3.53	233	1.185	4	3.61	3.51	305	1.164	4	3.58
Q21_2	Establish rapport	4.14	72	0.939	4	4.26	4.15	234	1.009	4	4.31	4.14	306	0.991	4	4.3
Q21_3	Use of effective communication	4.62	73	0.738	5	4.7	4.58	234	0.755	5	4.67	4.59	307	0.75	5	4.68
Q21_4	Temperament – calm and composed character	4.47	73	0.668	5	4.51	4.4	236	0.842	5	4.51	4.42	309	0.804	5	4.51
Q21_5	Knowledge – situational and within own role	4.33	73	0.668	4	4.37	4.2	235	0.878	4	4.31	4.23	308	0.833	4	4.33
Q21_6	Experience - previous learning to de-escalate	4.44	73	0.764	5	4.52	4.43	235	0.756	5	4.5	4.43	308	0.756	5	4.51
Q21_8	Character– imposing authoritative personality	2.99	72	1.261	3	3	3.42	231	1.135	4	3.49	3.32	303	1.179	3	3.39

Table 53. Q21 - Mean, Median and Standard Deviation for STTO and STTO.

Correlations

Spearman's rho				Q21_1	Q21_2	Q21_3	Q21_4	Q21_5	Q21_6	Q21_8
STTO	Q21_1	Use of time to de-escalate	Correlation Coefficient	1						
			Sig. (2-tailed)	.						
			N	72						
	Q21_2	Establish rapport	Correlation Coefficient	.506**	1					
			Sig. (2-tailed)	0	.					
			N	70	72					
	Q21_3	Use of effective communication	Correlation Coefficient	.302*	.441**	1				
			Sig. (2-tailed)	0.01	0	.				
			N	71	71	73				
	Q21_4	Temperament – calm and composed c	Correlation Coefficient	.242*	.445**	.516**	1			
			Sig. (2-tailed)	0.042	0	0	.			
			N	71	72	72	73			
	Q21_5	Knowledge – situational and within ov	Correlation Coefficient	.274*	.371**	0.196	.340**	1		
			Sig. (2-tailed)	0.02	0.001	0.099	0.003	.		
			N	72	71	72	72	73		
	Q21_6	Experience - learning from previous e	Correlation Coefficient	0.138	0.189	0.208	0.121	.344**	1	
			Sig. (2-tailed)	0.248	0.115	0.08	0.309	0.003	.	
			N	72	71	72	72	73	73	
	Q21_8	Character– imposing authoritative per	Correlation Coefficient	0.008	0.094	-0.037	0.165	0.163	0.027	1
			Sig. (2-tailed)	0.948	0.436	0.76	0.166	0.171	0.82	.
			N	71	71	71	72	72	72	72
AFO	Q21_1	Use of time to de-escalate	Correlation Coefficient	1						
			Sig. (2-tailed)	.						
			N	233						
	Q21_2	Establish rapport	Correlation Coefficient	.620**	1					
			Sig. (2-tailed)	0	.					
			N	233	234					
	Q21_3	Use of effective communication	Correlation Coefficient	.472**	.616**	1				
			Sig. (2-tailed)	0	0	.				
			N	229	230	234				
	Q21_4	Temperament – calm and composed c	Correlation Coefficient	.294**	.471**	.557**	1			
			Sig. (2-tailed)	0	0	0	.			
			N	232	233	230	236			
	Q21_5	Knowledge – situational and within ov	Correlation Coefficient	.253**	.274**	.255**	.449**	1		
			Sig. (2-tailed)	0	0	0	0	.		
			N	233	234	231	234	235		
	Q21_6	Experience - learning from previous e	Correlation Coefficient	.195**	.309**	.344**	.443**	.507**	1	
			Sig. (2-tailed)	0.003	0	0	0	0	.	
			N	233	234	231	234	235	235	
	Q21_8	Character– imposing authoritative per	Correlation Coefficient	-0.024	-0.087	-0.014	-0.084	0.07	0.09	1
			Sig. (2-tailed)	0.72	0.19	0.828	0.206	0.288	0.175	.
			N	230	230	228	229	230	230	231

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 54. Q21 Spearman's Correlation (r_s) results.

Unarmed * AFO		Spearman Rank Correlation r_s	R^2
Q22_1	For a Suicidal or Self Harm suspect	0.828	0.686
Q22_a	A Suspect presenting threat of violence towards another	0.876	0.767
Q22_b	For an Emotionally or Mentally Disturbed suspect	0.846	0.716
Q22_c	A Suicidal or Self Harm suspect armed with a weapon (not firearm)	0.816	0.666
Q22_d	For a Suspect presenting threat of violence towards another armed with a weapon (not firearm)	0.812	0.659
Q22_e	An Emotionally or Mentally Disturbed suspect armed with a weapon (not firearm)	0.815	0.665
Q22_f	For an Emotionally or Mentally Disturbed suspect armed with a weapon (firearm) presenting threat of violence towards another	0.756	0.571
Q22_g	For a Suicidal or Self Harm suspect armed with a weapon (firearm) presenting threat of violence towards another	0.739	0.546

Note. All Spearman Rank Correlation coefficients are significant at $p < .001$ (2 tailed) (N=315, AFO n=215, Unarmed n=70, df =99).

Table 55. Q22 Spearman's Rank Correlation (r_s).

Unarmed * AFO		Spearman Rank Correlation r_s	R^2
Q23_1	For a Suicidal or Self Harm Victim	0.853	0.668
Q23_a	A Victim presenting threat of violence towards another	0.879	0.728
Q23_b	For an Emotionally or Mentally Disturbed Victim	0.870	0.698
Q23_c	A Suicidal or Self Harm Victim armed with a weapon (not firearm)	0.804	0.579
Q23_d	For a Victim presenting threat of violence towards another armed with a weapon (not firearm)	0.797	0.567
Q23_e	An Emotionally or Mentally Disturbed Victim armed with a weapon (not firearm)	0.834	0.638
Q23_f	For an Emotionally or Mentally Disturbed Victim armed with a weapon (firearm) presenting threat of violence towards another	0.800	0.638
Q23_g	Suicidal or Self Harm Victim armed with a weapon (firearm) presenting threat of violence towards another	0.815	0.607

Note. All Spearman Rank Correlation coefficients are significant at $p < .001$ (2 tailed) (N=315, AFO n=215, Unarmed n=70, df=106).

Table 56. Q23 Spearman's Rank Correlation (r_s).

Unarmed * AFO		Spearman Rank Correlation r_s	R^2
Q24_1	For a Suicidal or Self Harm suspect	0.996	0.992
Q24_1_a	A Suspect presenting threat of violence towards another	0.949	0.901
Q24_1_b	For an Emotionally or Mentally Disturbed suspect	0.865	0.749
Q24_1_c	A Suicidal or Self Harm suspect armed with a weapon (not firearm)	0.924	0.855
Q24_1_d	For a Suspect presenting threat of violence towards another armed with a weapon (not firearm)	0.844	0.714
Q24_1_e	An Emotionally or Mentally Disturbed suspect armed with a weapon (not firearm)	0.844	0.855
Q24_1_f	For an Emotionally or Mentally Disturbed suspect armed with a weapon (firearm) presenting threat of violence towards another	0.949	0.903
Q24_1_g	For a Suicidal or Self Harm suspect armed with a weapon (firearm) presenting threat of violence towards another	0.890	0.794

Note. All Spearman Rank Correlation coefficients are significant at $p < .05$ level (2 tailed) (N=315, AFO n=215, Unarmed n=70, df=9).

Table 57. Q24 Spearman's Rank Correlation (r_s).

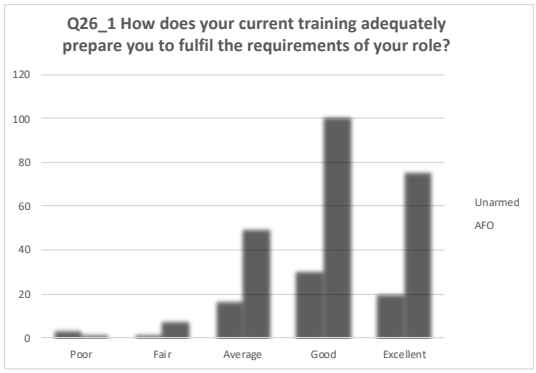
Unarmed * AFO		Spearman Rank Correlation r_s	R^2
Q25_1	For a Suicidal or Self Harm Victim	0.929	0.863
Q25_a	A Victim presenting threat of violence towards another	0.891	0.794
Q25_b	For an Emotionally or Mentally Disturbed Victim	0.932	0.869
Q25_c	A Suicidal or Self Harm Victim armed with a weapon (not firearm)	0.912	0.832
Q25_d	For a Victim presenting threat of violence towards another armed with a weapon (not firearm)	0.849	0.720
Q25_e	An Emotionally or Mentally Disturbed Victim armed with a weapon (not firearm)	0.937	0.878
Q25_f	For an Emotionally or Mentally Disturbed Victim armed with a weapon (firearm) presenting threat of violence towards another	0.895	0.802
Q25_g	Suicidal or Self Harm Victim armed with a weapon (firearm) presenting threat of violence towards another	0.929	0.863

Note. All Spearman Rank Correlation coefficients are significant at $p < .05$ level (2 tailed) (N=315, AFO n=215, Unarmed n=70, df=7).

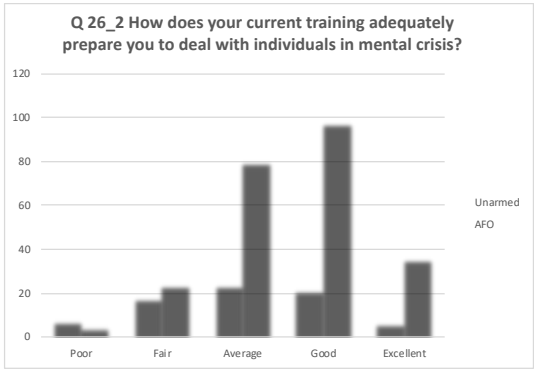
Table 58. Q25 Spearman's Rank Correlation (r_s).

Appendix G- Survey Analysis Q26.

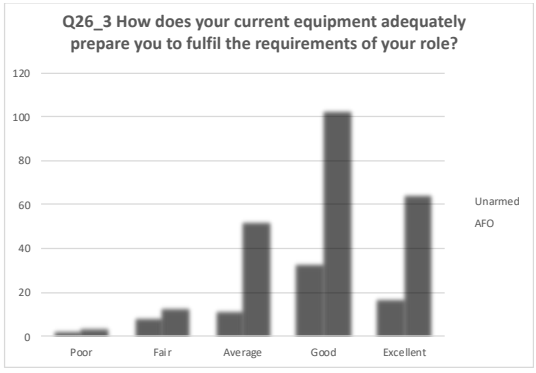
Q26_1 How does your current training adequately prepare you to fulfil the requirements of your role?	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
Poor	4	1.428	2	4.572	6
Fair	2	2.379	8	7.621	10
Average	17	15.942	50	51.058	67
Good	31	31.408	101	100.592	132
Excellent	20	22.842	76	73.158	96
Total	74		237		311



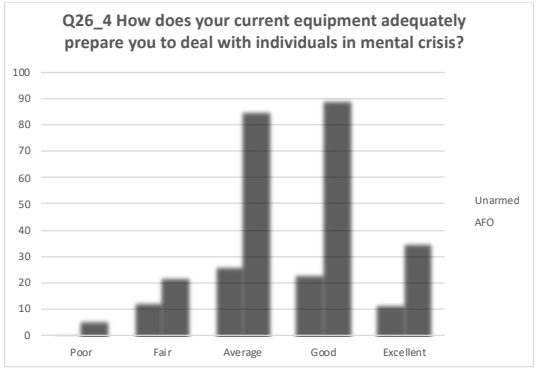
Q 26_2 How does your current training adequately prepare you to deal with individuals in mental crisis?	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
Poor	7	2.609	4	8.391	11
Fair	17	9.487	23	30.513	40
Average	23	24.192	79	77.808	102
Good	21	27.987	97	90.013	118
Excellent	6	9.724	35	31.276	41
Total	74		238		312



Q26_3 How does your current equipment adequately prepare you to fulfil the requirements of your role?	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
Poor	3	1.666	4	5.334	7
Fair	9	5.235	13	16.765	22
Average	12	15.228	52	48.772	64
Good	33	32.360	103	103.640	136
Excellent	17	19.511	65	62.489	82
Total	74		237		311



Q26_4 How does your current equipment adequately prepare you to deal with individuals in mental crisis?	STTO		AFO		Total
	Observed	*Expected*	*Observed*	*Expected*	
Poor	0	1.428	6	4.572	6
Fair	13	8.328	22	26.672	35
Average	26	26.412	85	84.588	111
Good	23	26.650	89	85.350	112
Excellent	12	11.183	35	35.817	47
Total	74		237		311



Appendix G- Survey Analysis Q26.

	STTO			AFO			Total		
	Mean	N	Std. Dev	Mean	N	Std. Dev	Mean	N	Std. Dev
Q26_1	3.82	74	1.038	4.02	237	0.863	3.97	311	0.91
Q26_2	3.03	74	1.11	3.57	238	0.915	3.44	312	0.99
Q26_3	3.7	74	1.082	3.89	237	0.926	3.85	311	0.967
Q26_4	3.46	74	0.968	3.53	237	0.941	3.51	311	0.946

Table 59. Q26 Mean, Median and Standard Deviation for STTO and STTO.

	Significance level	
	Fishers	Chi-Sq
Q26_1	0.073	-
Q26_2	0.0005	-
Q26_3	0.168	-
Q26_4	0.231	-

Note: Chronbach Alpha =.758

Table 60. Q26 Significance level results.

Mann-Whitney U test				
	p-value	MW *U value*	Std test Stat *z*	Effect size *r*
Q26_1	0.236	8016.5	-1.185	-0.0672
Q26_2	0	6374.5	-3.768	-0.2133
Q26_3	0.272	8069.5	-1.099	-0.0623
Q26_4	0.475	8310.5	-0.715	-0.0405

Table 61. Q26 Mann-Whitney U test results.

Correlations			Q26_1	Q26_2	Q26_3	Q26_4
STTO	Q26_1 How does your current training adequately prepare you to fulfil the requirements of your role?	Pearson Correlation	1			
		Sig. (2-tailed)				
		N	74			
	Q26_2 How does your current training adequately prepare you to deal with individuals in mental crisis?	Pearson Correlation	.491**	1		
		Sig. (2-tailed)	0			
		N	74	74		
	Q26_3 How does your current equipment adequately prepare you to fulfil the requirements of your role?	Pearson Correlation	.745**	.338**	1	
		Sig. (2-tailed)	0	0.003		
		N	74	74	74	
	Q26_4 How does your current equipment adequately prepare you to deal with individuals in mental crisis?	Pearson Correlation	.381**	.460**	.512**	1
		Sig. (2-tailed)	0.001	0	0	
		N	74	74	74	74
AFO	Q26_1 How does your current training adequately prepare you to fulfil the requirements of your role?	Pearson Correlation	1			
		Sig. (2-tailed)				
		N	237			
	Q26_2 How does your current training adequately prepare you to deal with individuals in mental crisis?	Pearson Correlation	.459**	1		
		Sig. (2-tailed)	0			
		N	237	238		
	Q26_3 How does your current equipment adequately prepare you to fulfil the requirements of your role?	Pearson Correlation	.511**	.316**	1	
		Sig. (2-tailed)	0	0		
		N	236	237	237	
	Q26_4 How does your current equipment adequately prepare you to deal with individuals in mental crisis?	Pearson Correlation	.349**	.490**	.385**	1
		Sig. (2-tailed)	0	0	0	
		N	236	237	237	237

** Correlation is significant at the 0.01 level (2-tailed).

Table 62. Q26. Spearman's Correlation (r_s).

Appendix G- Survey Analysis Q 26 Qualitative responses.

URN	Q5. STTO/AFO	Q26_1_b	Code	Q26_2_b	Code	Q26_3_b	Code	Q26_4_b	Code
36A	STTO	Strategy based on NDM and use/ application. Systems & measures in place to formulate considered and logical planned decisions.	9	More. Scenarios at training involving this/ also in tandem with negotiating team to improve knowledge around roles and responsibilities.	3	POD [Control Room officer] based at this time	99	POD [Control Room officer] based at this time	99
2A	AFO	No response	0	No response	0	No response	0	No response	0
3A	AFO	REGULAR TRAINING CYCLES WHICH HELP TEST AND IMPROVE YOU	2	At the moment I don't know a way that this could be improved it is well covered	5	The equipment is great but could be better with lighter bod [BodyArmour] which is coming	10	We are all able to deal with suspects/ victims from a safe distance if required	8
4A	AFO	Constant training on continuation training days with current up to date training scenarios	2	More scenarios with EMD suspects?	3	Finally received adequate useful kit (Crye) [ARV issue Uniform]	13	Our kit could look aggressive/ too much to someone with mental health issues.	14
5A	AFO	The current training is very applicable and as realistic as it can be	2	Training can only prepare you so much for this is my opinion. It comes down to life/job experience	9	Could be improved with better less lethal options being available to us	12	As above. Improved less lethal options should be available to us should they be required	11
6A	AFO	Frequent training of realistic scenarios	2	Occasional scenarios relevant to this	2	Consistent training with equipment and constant analysis of the kit provided to maintain the required equipment	1	Better restraint equipment i.e. Leg restraints	11
7A	AFO	I believe that we are wearing many different hats. Therefore training time is spread to thin between to many tactics	6	Next to none mental health training received. Best training learnt on the job	9	Our kit has always been very good. Better facilities for quick name checks etc would be good	5	As above [Our kit has always been very good. Better facilities for quick name checks etc would be good]	5
8A	AFO	No response	0	No response	0	No response	0	No response	0
9A	AFO	No response	0	No response	0	No response	0	No response	0
10A	AFO	No response	0	No response	0	No response	0	No response	0
11A	AFO	Good level of initial and continuation training - could always do more	2	Specific elements of training focus on this	3	Well equipped in general for the role	5	Does not differ from above	5
12A	AFO	Regular training at a high level, high expectations required constantly	2	Again, regular training & input surrounding individuals who are EMD	3	Heavily equipped to deal with a variety of incidents	5	Leaa than lethal options carried by each person & AEP as well as general policing skills.	11
13A	AFO	Our training enables us to provide the safest/ dynamic response to armed persons	2	No response	0	Whether an individual/ suspect is declared EMD or not we have sufficient equipment (Lethal/ Non Lethal) to deal with most circumstances	5	No response	0
1B	STTO	You can never have enough training	3	No response	0	No response	0	No response	0
2B	STTO	No response	0	Further training on negotaiting with someone suffering a MH issue or EMD	3	As an ARV officer I feel suitably equipped to deal with a variety of incidents in comparison to uniformed officers	5	No response	0
3B	STTO	Training is basic and very artificial compared to real life scenarios	3	There could be more input on all types of Mental Health	3	Kit is enough to prepare and protect you for most incidents we deal with	5	With the uplift in taser on response team it is easier to deal with that however the most important is communication	9
4B	STTO	You can't replicate real life scenarios in a training environment	3	Mental health professionals giving talks about their views and experiences	3	A uniformed PC has enough equipment to defend themselves from incidents they are likely to attend	5	No response	0
5B	STTO	No response	0	Little practical training of dealing with EMD. Normally PowerPoint based.	3	No response	0	No response	0
6B	STTO	No response	0	No response	0	No response	0	No response	0
7B	STTO	No response	0	No response	0	No response	0	No response	0
8B	STTO	No response	0	No response	0	No response	0	No response	0
9B	AFO	No response	0	No response	0	No response	0	No response	0
10B	STTO	Every situation is unique and you cannot train for every circumstance	3	Again, you cannot train for every circumstance I feel experience is key top above training	9	Equipment air satisfactory since the introduction of TASER to borough	5	As above. More pressing is LAS response times and the severe issues of beds at MH hospitals	6
11B	AFO	No response	0	No response	0	No response	0	No response	0
12B	STTO	No response	0	No response	0	No response	0	No response	0
13B	AFO	Realism within training environment	2	Mental health is an evolving situation. Cannot train for every eventuality	9	We have all (unreadable) from less lethal-lethal. Negotiating skills and OST techniques	5	Equipment is good but heavy and bulky. Could be reduced in weight.	14
14B	AFO	No response	0	No response	0	No response	0	No response	0
15B	AFO	No response	0	One hour input on [unreadable] a year	3	No response	0	No response	0
16B	STTO	More role plays and classroom input at training school/ NOT NCALT!	3	As above	3	Better CS/ Shields to go in [unreadable]	11	As above [Better CS/ Shields to go in]	11
17B	STTO	No response	0	Not much role play training	3	No response	0	There is no specific equipment for persons suffering MH within the Met that I am aware of	11
18B	STTO	The infrequency of OST means that physical reflexes are o revert to instinct, non-OST techniques	15	Every case is different, hard to prepare for	9	Taser, Asp, Handcuffs and your comms skills cover most things	5	No response	0
19B	STTO	OST once a year is not enough training to stay safe	15	Have no medical training	99	Gangs officers on borough have some of the most confrontation violence towards them. yet despite being trained in TASER are not allowed to carry. The VCTF who target the same individuals in the same estates are allowed to?	11	Have no medical training	99
20B	STTO	No response	0	No response	0	No response	0	No response	0
22B	STTO	Training is role specific, incidents/ replays are realistic	2	I do not feel police officers are given training to understand and help individuals in a crisis	6	PPE, radios etc good	5	We do not have access to peoples mental health history. Often taking people top places (hospitals) they are not known to	6
23B	STTO	The OST package is almost exactly the same very year. However the TASER training covers decision making & conflict management in much greater detail	15	There is almost no training in Mental Health at the moment	3	I am currently TASER trained and in addition to other OST kit, is an extra tactical option	5	Again as above we have very limited MH training	3
23B	STTO	I AM FORTUNATE ENOUGHT TO ATTEND SPECIALIST TRAINING AT PLACES LIKE MPSTC. UNLIKE OFFICERS ON BOROUGH WHO HAVE MORE LIMITED ACCESS TO GOOD PRACTICAL TRAINING	2	Any training I have received its been somewhat [unreadable]. It sometime difficult to train for the subtle differences between EMD subjects	3	With the exception of warm weather gear I feel adequately equipped on mobile patrol [unreadable]	5	Perhaps some sort of tech-iPad or other interface to build common ground	99
24B	AFO	It is a comprehensive, detailed input into all of the potential aspects of the role I undertake	2	We could always have more input around this subject	3	It is of a much better standards these days than it was years ago	5	As with 1No responseb[current training above] we could have better options	11
58B	AFO	No response	0	No response	0	No response	0	No response	0
59B	AFO	Should be more scenario based training & shooting practise	3	More training around communication techniques & understanding	3	Pretty satisfactory	5	Obviously can look over aggressive	14
60B	AFO	Need to practise more search	99	More specific training day input	3	No response	0	No response	0

Appendix G- Survey Analysis Q 26 Qualitative responses.

URN	Q5. STTO/AFO	Q26_1_b	Code	Q26_2_b	Code	Q26_3_b	Code	Q26_4_b	Code
61B	AFO	Good knowledge of use of force and when to use it	2	Very little practical training	3	Previous [unreadable] several options to use force if required	5	No response	0
62B	AFO	No response	0	No response	0	No response	0	No response	0
63B	AFO	No response	0	No response	0	No response	0	No response	0
64B	AFO	No response	0	No response	0	No response	0	No response	0
65B	AFO	No response	0	No response	0	No response	0	No response	0
65B	AFO	Good overall but need more time	3	Need more up to date/ relevant training scenarios	3	Too bulky body armour- is CS necessary?	10	Need more < lethal options. Taser s/gun?	11
43V	AFO	More practise for muscle memory & confidence using the training given	2	More input would improve it	3	Ballistic vest too cumbersome	10	Too cumbersome [Ballistic vest]	10
44B	AFO	We are trained to deal with known threats as they stand	2	As above [We are trained to deal with known threats as they stand]	5	No response	0	No response	0
41B	AFO	Not enough training	3	More training	3	Sufficient options	5	Sufficient options	5
42B	AFO	Our training has recently changed and inputs need to be more role specific	3	As above [Our training has recently changed and inputs need to be more role specific]	3	Better clothing and current upgrade ti SiG has improved	5	No response	0
9C	STTO	TASER- sometimes I am not allowed to carry it for example on Aid	7	Training is OK. Experience (police) & experience (life) are better	9	Taser is the best bit of kit the job have ever given me. The days of twenty officers running away whilst waiting for ARVs to not get stabbed are gone.	12	No issues.	5
10C	STTO	OST is farcical and not up to date with current treat/ levels of violence shown	15	Little to no training on MH other than a video which is staged	3	Taser is a great tool but CS is useless and batons are ineffectiveAs above [	11	As above [Taser is a great tool but CS is useless and batons are ineffective]	11
11C	STTO	Limited tactics	7	Limited input or guidance	3	Poor body armour	10	All officers given TASER	11
12C	STTO	Doesn't cover the situations of too many officers or public at incident/ no PIP/PIM input	3	This is better learnt through experience mental health is very unpredictable	9	More alternative uses would be useful entry to buildings, close grappling	99	You need communications skills not equipment. Beds in 163 sites	9
13C	STTO	No response	0	V. little input at all. Taser training scenarios is about it	3	Taser is good. CS is not	11	handcuffs and TASER, could be better	11
14C	STTO	No response	0	No response	0	No response	0	No response	0
15C	STTO	It provides the skills I need to deal with members of the public	5	Mental crisis is incorporated into training scenarios	2	The X2 [TASER] is a big improvement on the X26	12	They offer protection for us and the ability to protect others	5
999C	STTO	OST/TASER/Team updates	9	Regular updates from Mental Health team	3	TASER/ASP/CS	12	There if required	5
17C	STTO	It gives us the knowledge of the capabilities of the weapon to give better understanding when it would be effective in certain situations	2	More input from medical professionals	3	I feel the equipment is fit for purpose for us to do our job effectively	5	More inputs from medical professionals and recommendations from them	6
18C	STTO	Role plays are too slow paced compared to reality	3	Typically mental health incidents occur in my experience in a property with family present and drugs/alcohol present	99	Batons are too small and slow to draw. TASER holsters on belt are too awkward to draw from	11	Leg restraints and spit hoods are typically not available on patrol	11
39C	STTO	No response	0	No response	0	No response	0	No response	0
40C	STTO	No response	0	No response	0	No response	0	No response	0
1C	AFO	No response	0	No response	0	No response	0	No response	0
2C	STTO	No response	0	No real training for it	3	No response	0	No response	0
3C	STTO	No response	0	No response	0	No response	0	No response	0
4C	STTO	Opportunity to practise would be more beneficial rather than tested. ie TASER you should be able to visit a range and practise shooting TASER	3	To learn what happens after people are sectioned, medication and what happens when they are released	3	Different options available to us	5	All TASER equipped	11
5C	STTO	What training? OST is pants and TASER refresher once a year is all we get	15	I can't remember having any training. You're either effective at communication or you're not. Training will only prepare you for contingencies if the suspect won't co-operate	3	TASERs often don't work (close confinement etc.) I once chased a suspect with a pistol on him and I could have been shot dead.	11	Bring back body cuffs.	11
6C	STTO	Response role with TASER and OST equipment I have	5	More input on MH crisis management	3	At present TASER is adequate	12	With access to Level 2 equipment & TASER I can deal with most situations	11
7C	STTO	Cant teach common sense or communication skills	9	No response	0	Tablets- never work- IT overall not working	99	No response	0
8C	STTO	No response	0	Every situation unique so hard to train	7	No response	0	No response	0
998C	AFO	No response	0	More knowledge on Mental Health	3	No response	0	No response	0
30C	STTO	Equipment in some areas is old and dated needs to be looked at	1	Training is good but feel that some incidents can not be taught how to deal with it	9	TASER is brilliant, other equipment needs updating	12	Can never prepare for everything	9
31C	STTO	No response	0	No response	0	No response	0	No response	0
32C	STTO	No response	0	Needs more input on managing mental health & understanding it	3	No response	0	No response	0
33C	STTO	No response	0	No response	0	No response	0	No response	0
34C	STTO	No response	0	No response	0	No response	0	No response	0
35C	STTO	Very well prepped	5	Could be better-re signs & symptoms	3	No response	0	Need the training re enhanced tactics	3
36C	STTO	Providing training and insight is better than not providing such training	2	No response	0	No response	0	No response	0
37C	STTO	No response	0	No response	0	No response	0	Leg restraints	11
38C	STTO	Not enough use like incidents	3	A lot of MH is from incidents [unreadable] have personally dealt with	9	CS is a waste of time	11	NHS is the [unreadable] need	6

Appendix G- Survey Analysis Q 26 Qualitative responses .

URN	Q5. STTO/AFO	Q26_1_b	Code	Q26_2_b	Code	Q26_3_b	Code	Q26_4_b	Code
20C	AFO	No response	0	No response	0	No response	0	No response	0
21C	AFO	This is not long enough [training]	3	As above [This is not long enough -training]	3	No response	0	No response	0
22C	AFO	Learn from other calls	9	Firearms may not go down well	4	Old equipment MPS	1	Firearms may not go down well	4
23C	AFO	No response	0	No response	0	No response	0	No response	0
24C	AFO	No response	0	No response	0	No response	0	No response	0
25C	AFO	As an AFOP we could always have more training. We only get to shoot once every three months	3	There is very little training towards Mental Health	3	We are equipped as an AFO with all we need	5	No response	0
26C	AFO	Improving	2	Firearms command improving	4	Poorly prepared	99	No response	0
27C	STTO	No response	0	I can't think of any mental crisis training I have ever been [unreadable] in	3	Broken IVMA in cars, no support channel on radios	99	No response	0
28C	STTO	Equipped with TASER	5	Have special Mental Health cars who come & assist with professional aboard	6	Equipped with TASER	5	No response	0
29C	STTO	Feel confident in using equipment	5	Training is adequate although behaviour is unpredictable	3	Equipmen is good	5	Equipment is good, but sometimes reluctant on using on person in crisis	7
1E	AFO	No response	0	No response	0	No response	0	No response	0
50B	AFO	No response	0	In depth mental health training	3	Terrible uniform, thin trousers, bulky overcoat	14	We don't know enough about mental health	6
51B	AFO	More training should be implemented to assist officers in dealing	3	Local based training could be implemented to assist younger officers who do not have prior experience	3	Equipment that totally negates any risk to the officer using them	5	Use of implements like X2 and X26 TASER are helpful but a more [unreadable] tool could be considered	11
52B	AFO	No response	0	No response	0	No response	0	No response	0
997C	AFO	No response	0	We now pick up the failings of the NHS	7	No response	0	No response	0
1A	AFO	Up to date with current threat & climate. Continually training to current threat	5	Continually thrown into EMD scenarios	3	Kit has changed for the better over the past 5-6 years Much better prepared for evolving [unreadable] now. Always evolving so always a need to review & update	12	Could do with more less lethal options on all cars eg. Baton Gun- X2 has improved TASER	11
26A	AFO	No response	0	No response	0	No response	0	No response	0
27A	AFO	No response	0	No response	0	No response	0	No response	0
33A	AFO	No response	0	No response	0	Needs updated equipment i.e. bod &a lids	10	No response	0
32A	AFO	No response	0	No response	0	No response	0	No response	0
33A	AFO	Very realistic and gives all skills to enable development	2	Perhaps further training would help	3	Have the equipment needed	5	Its decision making and the actions with the kit	9
45B	AFO	No response	0	No response	0	No response	0	More training on mental health	3
46B	AFO	More role related training now rather than covering non relevant tactics ie Vehicle Drills	3	FTAC at our own disposal at BP [Buckingham Palace]	99	A S baton gun be an option	11	Baton gun as an option in addition	11
53B	AFO	Exercises based on experienced firearms officers previous experience helps	9	Time, distance and space. Support from mental health team is where the failure lay	6	X26 [TASER]	12	mark one mouth!!	9
54B	AFO	No response	0	No response	0	No response	0	No response	0
55B	AFO	No response	0	No response	0	No response	0	No response	0
56B	AFO	No response	0	No response	0	No response	0	No response	0
156B	AFO	More of the same would be better	3	No response	0	No response	0	No response	0
48B	AFO	More than 4 days training a year would be good	3	No response	0	Still waiting on pelters and helmets	1	Good OST equipment provide however still waiting for helmets	14
47B	AFO	No response	0	No response	0	No response	0	No response	0
34A	AFO	The training is excellent but there are always more variables on live operations that it is impossible to factor into training	2	As above [The training is excellent but there are always more variables on live operations that it is impossible to factor into training]	9	As above [The training is excellent but there are always more variables on live operations that it is impossible to factor into training]	99	No response	0
49B	AFO	No response	0	No response	0	No response	0	No response	0
35A	AFO	Training dept work hard to copy real life scenarios. However on the ground always more elements to deal with	2	Maybe ask someone who has/ had MH crisis what they feel how we could help?	3	On person great stuff, in V [vehicles] not so good IVMA etc.	1	Kit on person spot on.	5
41C	STTO	No response	0	No response	0	No response	0	No response	0
43C	STTO	No response	0	So many types of MH that it is hard to prepare for all events	9	No response	0	No response	0
41C	STTO	Training brief- don't use equipment often until refresher	3	No response	0	No response	0	No response	0
5G	AFO	I feel we don't have enough training in [Unreadable] to keep the skill up	3	Someone who has a mental crisis is unpredictable so you can't prepare for every outcome	9	We have a lot of options/tactics to use	5	[As above] We have a lot of options/tactics to use	5
4G	AFO	Would like more time for training	3	No response	0	No response	0	No response	0
3G	AFO	No response	0	No response	0	No response	0	No response	0
2G	AFO	No response	0	No response	0	No response	0	No response	0

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URN	Q5. STTO/AFO	Q26_1_b	Code	Q26_2_b	Code	Q26_3_b	Code	Q26_4_b	Code
1G	AFO	The AFO role is unclear and there is an overlap with ARV role	99	It is very difficult to prepare for mental crisis	9	Equipment is old, vests are heavy, most firearms too old	10	Not really the best equipment	11
60F	AFO	Not enough time training and practicing. Not enough range time	3	Scenarios in training around dealing with mental health whilst on annual ops	3	Kit is good. Body armour could be a lot more agile, very bulky and cumbersome	10	There is no emphasis on dealing with mental health	3
59F	AFO	No response	0	No response	0	No response	0	No response	0
58F	AFO	No response	0	No response	0	No response	0	No response	0
57F	AFO	It is of a good quality, its just not often or long enough for both range and tactics	2	We always do tactics role plays involving EMD as they our biggest worry	2	It does, Id just like more practice to be even better	3	Again regular training done as its our biggest worry around discharging a firearm	3
56F	AFO	Good but need more of it	3	We have good training for mental crisis	2	We apparently have all the kit we need	5	We are equipped with what we need	5
55F	AFO	I think we're pretty well trained but require more refresher training	3	No response	0	No response	0	No response	0
54F	AFO	No response	0	No response	0	No response	0	No response	0
53F	AFO	Lack of investment and time	3	Lack of investment and time	3	Lack of investment	99	Lack of investment	99
52F	AFO	No response	0	No response	0	No response	0	No response	0
51F	AFO	No response	0	No response	0	No response	0	No response	0
50F	AFO	No response	0	No response	0	No response	0	No response	0
49F	AFO	We receive good training, just not enough	3	No response	0	No response	0	No response	0
48F	AFO	More range time required for the role	3	No response	0	No response	0	No response	0
47F	AFO	More training time required to meet current threat	3	No response	0	No response	0	No response	0
46F	AFO	Could do with more training more regularly	3	No response	0	No response	0	No response	0
45F	AFO	No response	0	No response	0	No response	0	No response	0
44F	AFO	Don't shoot enough	3	No response	0	Armour too heavy/cumbersome, limits movement	10	Presence of MP5 can make it difficult to engage as distance is required	4
43F	AFO	No response	0	More mental health training	3	MP5 getting a dated weapon, better weapons available	4	Equipment is fine but constantly being Tri-armed is not effective in most non firearm situations	4
42F	AFO	No response	0	No response	0	No response	0	No response	0
41F	AFO	It is improving but not enough training days a year	3	No response	0	No response	0	AFO's get all the old rubbish kit, body armour, belt rigs, weapons, training time.	4
40F	AFO	Need more training	3	No response	0	No response	0	Too heavy, old kit, but getting better.	4
39F	AFO	No response	0	No response	0	MP5 - not fit for purpose	4	No response	0
38F	AFO	Undergo AFO training 4 times a year and able to train and simulate scenarios	3	Undergo AFO training 4 times a year and able to train and simulate scenarios	3	Recently been given better equipment	5	No response	0
37F	AFO	Various option	5	More input required	3	Adequate options	5	More training	3
36F	AFO	Need more training in searching and range time	3	No response	0	No response	0	No response	0
35F	AFO	Training delivered covers what I need to do my job effectively	2	Risk assessment training allows you to make effective decisions	9	No response	0	No response	0
34F	AFO	No response	0	No response	0	No response	0	No response	0
33F	AFO	We don't get enough training	3	Always need more training	3	No response	0	No response	0
32F	AFO	No response	0	No response	0	No response	0	No response	0
31F	AFO	Still needs more role specific scenarios	3	No response	0	No response	0	No response	0
30F	AFO	More role specific training & regular training	3	No response	0	No response	0	No response	0
28F	AFO	Tac Ref is aimed at our AFO role	2	We don't have any training for this	3	[unreadable] for more adequate equipment	99	No response	0
29F	AFO	They do as much as they can with what they have - time, equipment, money	2	More training	3	Ageing weapons, not enough kit	4	More items available for deployment	11
27F	AFO	No response	0	No response	0	No response	0	No response	0
26F	AFO	No response	0	No response	0	No response	0	No response	0
25F	AFO	Training has become more relevant to present threat to us from terrorism/ attack	2	More support with mental crisis situations once suspect arrested/ sectioned	6	Equipment is only just being updated to relevant calibers, clothing is getting better	5	Adapt to the situation, use what's available. Mental health issues are fluid	9
24F	AFO	No response	0	No response	0	No response	0	No response	0
21F	AFO	Excellent training which gives you a variety scenarios and situations	2	Training provides situations of dealing with 'suspects' who are displaying crisis	2	Carry a range of equipment and weapons	5	Somewhere to store long arms other than on your person	4
23F	AFO	No response	0	No response	0	No response	0	No response	0

Appendix G- Survey Analysis Q 26 Qualitative responses.

URN	Q5. STTO/AFO	Q26_1_b	Code	Q26_2_b	Code	Q26_3_b	Code	Q26_4_b	Code
20F	AFO	No response	0	No response	0	No response	0	No response	0
19F	AFO	No response	0	No response	0	No response	0	No response	0
17F	AFO	No response	0	No response	0	No response	0	No response	0
18F	AFO	No response	0	No response	0	No response	0	No response	0
16F	AFO	Training has improved over the years	2	Not really touched upon	3	Equipment issued is getting better each year	5	No response	0
15F	AFO	Not enough time	3	As above [Not enough time]	3	Updated weaponry needed	4	As above [Updated weaponry needed]	4
13F	AFO	No response	0	No response	0	No response	0	No response	0
14F	AFO	We now have good equipment	1	We are given training on how to deal with mental health situations	2	No response	0	No response	0
11F	AFO	No response	0	No response	0	No response	0	No response	0
12F	AFO	No response	0	No response	0	No response	0	No response	0
9F	AFO	No response	0	No response	0	No response	0	No response	0
10F	AFO	No response	0	No response	0	No response	0	LIGHTER EQUIPMENT, BODY ARMOUR FOR MANOEUVRABILITY	10
7F	AFO	No response	0	No response	0	No response	0	No response	0
8F	AFO	No response	0	No response	0	Poorly equipped	1	No response	0
6F	AFO	No response	0	No response	0	No response	0	No response	0
5F	AFO	More frequent training	3	No response	0	Not up to standard	1	No response	0
4F	AFO	No response	0	No response	0	No response	0	No response	0
3F	AFO	No response	0	No response	0	No response	0	No response	0
2F	AFO	Too little training time	3	Too little training time	3	Too little training time	3	No response	0
1F	AFO	We don't get enough training to fulfil the role	3	Give us time to think about the situation then deal with it	3	Enough firepower to deal with most known threats	5	Communication is the best method	9
60E	AFO	No response	0	No response	0	No response	0	No response	0
59E	AFO	Not enough. Not bespoke to RASP	3	There isn't any MH training	3	CC is poor, MP5 in front limits options as always on offer	11	MP5 in front is cumbersome & threatening to them	4
57E	AFO	AFO training is current bottom of priorities- time on the range/ site is poor	3	Training changes constantly and generally once done is many years before further training	3	Although currently changing, weapon used (MP5) 4No response years old & held together with duct tape	4	X2 TASER if necessary, but communication is best equipment	9
55E	AFO	More shooting practise	3	No response	0	More warm weather kit & clothing	0	No response	0
56E	AFO	No response	0	No response	0	No response	0	No response	0
53E	AFO	Training is very good for the role	2	No response	0	No response	0	No response	0
54E	AFO	No response	0	No response	0	No response	0	No response	0
51E	AFO	More tactical & Firearms training required	3	Very little training since becoming an AFO	3	Lack of equipment on post	1	Lack of equipment on post & work outside MPS	11
52E	AFO	No response	0	No response	0	No response	0	No response	0
49E	AFO	Outdated Firearms, heavy kit, no ballistic cover at some gates	1	More training at ELS	3	Vehicle fleet needs updating/ not enough. AfOs having to walk or get the tube to posts = Threat	1	No response	0
50E	AFO	More range time is needed and 2 day Tac Ref cycles	3	mental health is unpredictable, training does it best to prepare	9	We have kit?	99	As above [We have kit?]	99
47E	AFO	It develops your skills	5	No response	0	Could do with thermal gloves and thermals	14	No response	0
48E	AFO	No response	0	No response	0	No response	0	No response	0
46E	AFO	No response	0	No response	0	No response	0	No response	0
45E	AFO	No response	0	No response	0	No response	0	No response	0
43E	AFO	More training/ Tac Refs required. More range time required	3	No response	0	No response	0	No response	0
44E	AFO	Training not frequent enough	3	Scenarios- nothing	3	No response	0	We carry all PPE , TASERs and Firearms	5
42E	AFO	TASER training & classification not done with firearms perspective. Not enough training in shooting & tactics	3	Very limited input. No where near enough	3	Tri Weapons, OST equipment & ballistic vest Good. We are still waiting for kevlar helmet & Pelters	4	Very little more kit would help	99
40E	AFO	No response	0	No response	0	No response	0	No response	0
41E	AFO	Primary weapons are old and in poor nick	4	More time to train	3	As 1No responsea [More time to train]	3	No response	0

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URN	Q5. STTO/AFO	Q26_1_b	Code	Q26_2_b	Code	Q26_3_b	Code	Q26_4_b	Code
39E	AFO	Good training/ shooting- need more	3	As above [Good training/ shooting- need more]	2	As above [Good training/ shooting- need more]	3	As above [Good training/ shooting- need more]	3
38E	AFO	More time to practise would be great	3	More training	3	No response	0	Carrying firearm may not help when dealing with mental health	4
36E	AFO	Training is good but not frequent enough	3	Training not frequent enough	3	Most things are adequate	5	We have PPE. I don't see what other options there are for us	5
37E	AFO	Not enough training	3	All training is computer based	3	Equipment can always be improved for our role	5	TASER and communication	5
344E	AFO	Limited time allocated for training. Approx 1 day every 3 months	3	Little input other than NCALT computer packages. Occasional scenario in practical training	3	Receive equipment ad-hoc. Seems constant battle to request	1	Not applicable	99
32E	AFO	Training is varied & unique to my role. Using the NDM & less lethal as well as conventional firearms	9	Knowledge of EMD/EBI & bugle principles allow for a response to the above	2	Equipment used is best on the market & up to date	1	As above [Equipment used is best on the market & up to date]	5
33E	AFO	No response	0	No response	0	No response	0	No response	0
31E	STTO	No response	0	No response	0	X2 generally less effective than X26	11	As above [X2 generally less effective than X26]	11
30E	AFO	No response	0	No response	0	No response	0	No response	0
28E	AFO	This course is specifically geared towards the role of AFO/ARV	2	Emphasis is placed on EMD and how we can deal with them effectively. Input [unreadable] someone who has been dealt with by police and an EMD	3	Wehn operatonal we have access to all equipment	5	No response	0
29E	STTO	No response	0	Had various NCALTs but learning first hand and from colleagues	3	I currently carry a TASER and this is a very good tool as prevents situations getting worse	12	Unsure, but maybe have a shield of some sort for protection	11
26E	AFO	As a level one public order and AFO officer I have been equipped with the relevant equipment	2	More in depth training	3	Satisfied I have relevant equipment	5	No response	0
27E	STTO	Taser training prepares you very well, emphases communication	2	I don't feel we do enough training in this	3	No response	0	I think more trainings needed in this, with 'real life scenarios'	3
24E	AFO	Covers EMD, vulnerable, violent- a good range	9	Lots of EMD principles but very difficult to know how a mental crisis (esp with a firearm) could look	3	Its good but understandably even better equip is more expensive	5	No response	0
25E	AFO	No response	0	No response	0	No response	0	No response	0
55C	AFO	No response	0	No response	0	No response	0	No response	0
17E	STTO	We have no role specific training in relation to use of force	3	Role specific training	3	RTPC do not carry tasers even though for London & can deal with anything just as borough do	11	Basic equipment, and I would use communication where possible and sometimes deal with those in mental crisis in a car	99
19E	STTO	Taser instructor, used taser for number of years on TSG, building on that knowledge & experience with courses	2	More training, we have limited knowledge of how to provide first aid	3	All the equipment I need & more	5	No response	0
18E	STTO	No response	0	No response	0	No response	0	No response	0
43A	AFO	Regular training with excellent scenarios	2	No mental health scenarios for a while	3	Good kit & easy to maintain/replace	5	No response	0
42A	AFO	I feel I have enough training, but there's always room for more. Our facilities and training locations are excellent and a privilege	2	We aren't mental health experts, there's always room for improvement, but I feel we receive enough training	2	I feel I have enough equipment but new equipment is always welcome	5	Our equipment shouldn't change too much. If its a healthy person or someone dealing with a mental health crisis, you must deal with the threat	9
41A	AFO	No response	0	No response	0	No response	0	No response	0
40A	AFO	Current training practises are very good. Usual constraints of time/money/facilities remain an issue	2	We have dedicated scenario based training for individuals in "mental crisis"	3	Generally very good, limited equipment, especially as there are better options out there	5	Difficult to answer without without a specific example, especially in my role	5
39A	AFO	Not enough training regarding "running jobs", outside of OFC course	3	No response	0	We have enough kit for the job	5	No response	0
38A	AFO	No response	0	[Unreadable]	0	No response	0	No response	0
37A	AFO	No response	0	No response	0	No response	0	No response	0
53A	STTO	No response	0	No response	0	No response	0	No response	0
52A	AFO	No response	0	No response	0	No response	0	No response	0
51A	AFO	No response	0	No response	0	No response	0	No response	0
50A	AFO	No response	0	Very little current dealing with individuals with a MH crisis in my role	3	No response	0	No response	0
49A	AFO	No response	0	No response	0	No response	0	No response	0
48A	AFO	No response	0	No response	0	NCALT is not an effective learning tool for how I learn and take in information	3	No response	0
47A	STTO	Although I do not carry on shift, so my tactical options change from day to day, whether issued a taser or a firearm	99	This isn't a big thing in our training as TSG AFO is really only for CT operation	99	Yes when issued, as only get taser on some shifts and firearm extremely rarely	4	No response	0
46A	STTO	No response	0	No response	0	No response	0	No response	0
45A	STTO	No response	0	No response	0	No response	0	No response	0
44A	AFO	No response	0	No response	0	No response	0	No response	0
21E	AFO	Training time reduced due to trim force training travel time	3	Good EMO input	2	Good tools, mental health knowledge could be better signs/symptoms	6	No response	0
20E	STTO	Qualified instructors but there are more centres available	99	Not medically trained to assess there, working off assumption and best guess	3	No requirement for further equipment	5	Training/educator	3
46C	AFO	No response	0	No response	0	No response	0	No response	0
45C	AFO	Thorough intensive training	2	Limited MH training	3	No response	0	No response	0

Appendix G- Survey Analysis Q 26 Qualitative responses.

URN	Q5. STTO/AFO	Q26_1_b	Code	Q26_2_b	Code	Q26_3_b	Code	Q26_4_b	Code
39E	AFO	Good training/ shooting- need more	3	As above [Good training/ shooting- need more]	2	As above [Good training/ shooting- need more]	3	As above [Good training/ shooting- need more]	3
38E	AFO	More time to practise would be great	3	More training	3	No response	0	Carrying firearm may not help when dealing with mental health	4
36E	AFO	Training is good but not frequent enough	3	Training not frequent enough	3	Most things are adequate	5	We have PPE. I don't see what other options there are for us	5
37E	AFO	Not enough training	3	All training is computer based	3	Equipment can always be improved for our role	5	TASER and communication	5
344E	AFO	Limited time allocated for training. Approx 1 day every 3 months	3	Little input other than NCALT computer packages. Occasional scenario in practical training	3	Receive equipment ad-hoc. Seems constant battle to request	1	Not applicable	99
32E	AFO	Training is varied & unique to my role. Using the NDM & less lethal as well as conventional firearms	9	Knowledge of EMD/EBI & bugle principles allow for a response to the above	2	Equipment used is best on the market & up to date	1	As above [Equipment used is best on the market & up to date]	5
33E	AFO	No response	0	No response	0	No response	0	No response	0
31E	STTO	No response	0	No response	0	X2 generally less effective than X26	11	As above [X2 generally less effective than X26]	11
30E	AFO	No response	0	No response	0	No response	0	No response	0
28E	AFO	This course is specifically geared towards the role of AFO/ARV	2	Emphasis is placed on EMD and how we can deal with them effectively. Input [unreadable] someone who has been dealt with by police and an EMD	3	Wehn operatonal we have access to all equipment	5	No response	0
29E	STTO	No response	0	Had various NCALTs but learning first hand and from colleagues	3	I currently carry a TASER and this is a very good tool as prevents situations getting worse	12	Unsure, but maybe have a shield of some sort for protection	11
26E	AFO	As a level one public order and AFO officer I have been equipped with the relevant equipment	2	More in depth training	3	Satisfied I have relevant equipment	5	No response	0
27E	STTO	Taser training prepares you very well, emphases communication	2	I don't feel we do enough training in this	3	No response	0	I think more trainings needed in this, with 'real life scenarios'	3
24E	AFO	Covers EMD, vulnerable, violent- a good range	9	Lots of EMD principles but very difficult to know how a mental crisis (esp with a firearm) could look	3	Its good but understandably even better equip is more expensive	5	No response	0
25E	AFO	No response	0	No response	0	No response	0	No response	0
55C	AFO	No response	0	No response	0	No response	0	No response	0
17E	STTO	We have no role specific training in relation to use of force	3	Role specific training	3	RTPC do not carry tasers even though for London & can deal with anything just as borough do	11	Basic equipment, and I would use communication where possible and sometimes deal with those in mental crisis in a car	99
19E	STTO	Taser instructor, used taser for number of years on TSG, building on that knowledge & experience with courses	2	More training, we have limited knowledge of how to provide first aid	3	All the equipment I need & more	5	No response	0
18E	STTO	No response	0	No response	0	No response	0	No response	0
43A	AFO	Regular training with excellent scenarios	2	No mental health scenarios for a while	3	Good kit & easy to maintain/replace	5	No response	0
42A	AFO	I feel I have enough training, but there's always room for more. Our facilities and training locations are excellent and a privilege	2	We aren't mental health experts, there's always room for improvement, but I feel we receive enough training	2	I feel I have enough equipment but new equipment is always welcome	5	Our equipment shouldn't change too much. If its a healthy person or someone dealing with a mental health crisis, you must deal with the threat	9
41A	AFO	No response	0	No response	0	No response	0	No response	0
40A	AFO	Current training practises are very good. Usual constraints of time/money/facilities remain an issue	2	We have dedicated scenario based training for individuals in "mental crisis"	3	Generally very good, limited equipment, especially as there are better options out there	5	Difficult to answer without without a specific example, especially in my role	5
39A	AFO	Not enough training regarding "running jobs", outside of OFC course	3	No response	0	We have enough kit for the job	5	No response	0
38A	AFO	No response	0	[Unreadable]	0	No response	0	No response	0
37A	AFO	No response	0	No response	0	No response	0	No response	0
53A	STTO	No response	0	No response	0	No response	0	No response	0
52A	AFO	No response	0	No response	0	No response	0	No response	0
51A	AFO	No response	0	No response	0	No response	0	No response	0
50A	AFO	No response	0	Very little current dealing with individuals with a MH crisis in my role	3	No response	0	No response	0
49A	AFO	No response	0	No response	0	No response	0	No response	0
48A	AFO	No response	0	No response	0	NCALT is not an effective learning tool for how I learn and take in information	3	No response	0
47A	STTO	Although I do not carry on shift, so my tactical options change from day to day, whether issued a taser or a firearm	99	This isn't a big thing in our training as TSG AFO is really only for CT operation	99	Yes when issued, as only get taser on some shifts and firearm extremely rarely	4	No response	0
46A	STTO	No response	0	No response	0	No response	0	No response	0
45A	STTO	No response	0	No response	0	No response	0	No response	0
44A	AFO	No response	0	No response	0	No response	0	No response	0
21E	AFO	Training time reduced due to trim force training travel time	3	Good EMO input	2	Good tools, mental health knowledge could be better signs/symptoms	6	No response	0
20E	STTO	Qualified instructors but there are more centres available	99	Not medically trained to assess there, working off assumption and best guess	3	No requirement for further equipment	5	Training/educator	3
46C	AFO	No response	0	No response	0	No response	0	No response	0
45C	AFO	Thorough intensive training	2	Limited MH training	3	No response	0	No response	0

Appendix H – Statistical Analysis of MPS Use of Force dataset.

	Main Duty	*n*	%
STTO	Foot patrol	1047	2.5
	Mobile patrol	36182	85.1
	Custody	551	1.3
	PSU/Public order	1595	3.8
	Other	2515	5.9
	Roads policing	328	0.8
	Dog handler duty	25	0.1
	CID	130	0.3
	Off duty	93	0.2
	Surveillance	64	0.2
	Mounted section duties	2	0
	sub-total	42532	100
AFO	ARV	3427	91
	CTSFO	102	2.7
	AFO	235	6.2
	sub-total	3764	100
	Total	46296	-

Table 63. Frequencies - Main Duty

Location				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Public area	28381	66.7	2742	72.8
Privare Dwelling	9130	21.5	795	21.1
Police area	2419	5.7	35	0.9
Other area	2602	6.1	192	5.1
Total	42532	100	3764	100

Table 64. Frequencies - Location

Assaulted By Subject				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	1812	4.3	39	1
No	40720	95.7	3725	99
Total	42532	100	3764	100

Table 65. Frequencies – Assaulted by Subject

Assaulted With Weapon				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	1812	4.3	39	1
No	40720	95.7	3725	99
Total	42532	100	3764	100

Table 66. Frequencies – Assaulted with Weapon

Threatened with Weapon?				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	918	2.2	49	1.3
No	41614	97.8	3715	98.7
Total	42532	100	3764	100

Table 67. Frequencies – Threatened with Weapon

Outcome				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Made off/escaped	345	0.8	35	0.9
Arrested	32174	75.6	2850	75.7
Hopitalised	1141	2.7	79	2.1
Detained - Mental health Act	1131	2.7	88	2.3
Other	7741	18.2	711	18.9
Not entered	0	0	1	0
Total	42532	100	3764	100

Table 68. Frequencies – Outcome

Impact Factor: Possesion of a weapon				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	13213	31.1	2785	74
No	29319	68.9	979	26
Total	42532	100	3764	100

Impact Factor: Mental Health				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	7178	16.9	380	10.1
No	35354	83.1	3384	89.9
Total	42532	100	3764	100

Impact Factor: Alcohol				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	12099	28.4	435	11.6
No	30433	71.6	3329	88.4
Total	42532	100	3764	100

Impact Factor: Prior K'wledge				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	13157	30.9	954	25.3
No	29375	69.1	2810	74.7
Total	42532	100	3764	100

Impact Factor: Drugs				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	14875	35	512	13.6
No	27657	65	3252	86.4
Total	42532	100	3764	100

Impact Factor: Size/Gender/Build				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	15514	36.5	672	17.9
No	27018	63.5	3092	82.1
Total	42532	100	3764	100

Impact Factor: Acute Behavioural Disorder				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	944	2.2	58	1.5
No	41588	97.8	3706	98.5
Total	42532	100	3764	100

Impact Factor: Other				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	3432	8.1	249	6.6
No	39100	91.9	3515	93.4
Total	42532	100	3764	100

Impact Factor: Crowd				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	6128	14.4	323	8.6
No	36404	85.6	3441	91.4
Total	42532	100	3764	100

Table 69. Frequencies – Impact Factors

STTO and AFO reponse to Impact Factors								
Impact Factor	Spearman Correlation (rs)				STTO		AFO	
	Tactic 1	Tactic 2	Tactic 3	Total	*n*	%	*n*	%
Alcohol	0.903	0.959	0.860	0.914	21459	26.2%	728	11.0%
Drugs	0.910	0.943	0.893	0.917	24634	30.0%	815	12.4%
Mental Health	0.814	0.795	0.879	0.821	13393	16.3%	629	9.5%
Poss. Weapon	0.633	0.721	0.835	0.670	22540	27.5%	4418	67.0%
				Total	82026	-	6590	-

(Note: All $p < .001$, $df = 25$)

Table 70. Spearman Correlation – Impact Factors * Tactics

STTO ans AFO Tactical Response to Impact Factors.																												
Impact Factor	Role	Tactic (rank)	Non-comp h/cuff	AEP aimed	Baton drawn	Baton used	TASER aimed	TASER a/d stun	TASER arced	TASER drawn	TASER d/stun	TASER fired	TASER red-dot	Comp h/cuff	Dog bite	Dog deploy	Firearm aimed	Firearm fired	Ground restrain	CS drawn	CS used	L/B restrain	Other	Shield	Spit guard	Tactical comms	U/arm skills	Total
Alcohol	STTO	1	1875	0	35	10	74	3	4	344	3	62	402	3202	0	1	2	0	529	6	9	235	101	10	31	3776	1385	12099
		2	1378	0	32	13	59	2	2	188	0	48	200	1189	0	0	1	0	634	8	10	284	104	6	34	568	1644	6404
		3	501	0	17	16	54	0	2	48	0	37	85	152	0	1	0	0	625	9	7	246	89	4	37	199	827	2956
	AFO	1	45	0	0	0	4	0	0	6	0	5	49	93	0	0	55	0	13	0	1	3	3	0	3	111	44	435
		2	34	1	1	0	1	0	0	3	0	6	12	38	0	0	11	0	12	0	0	5	3	7	2	23	47	206
		3	10	0	0	1	2	0	0	1	0	2	8	8	0	0	10	0	11	0	0	2	2	1	0	4	25	87
Drugs	STTO	1	1672	0	36	15	113	1	6	366	4	78	474	5672	0	0	3	0	491	15	13	222	110	7	30	4296	1251	14875
		2	1311	0	45	25	88	2	1	230	0	56	229	1805	0	0	2	0	562	12	11	261	101	10	27	587	1487	6852
		3	519	0	17	22	58	1	3	60	2	38	95	181	0	1	0	0	577	9	10	222	89	2	27	201	773	2907
	AFO	1	27	0	0	0	8	0	0	8	0	6	46	165	1	0	75	0	13	0	0	4	3	0	0	111	45	512
		2	33	1	1	0	3	0	0	3	0	4	13	48	0	1	13	0	11	0	0	3	3	4	2	33	43	219
		3	6	0	0	0	1	0	0	1	0	4	5	10	0	0	5	0	14	0	0	3	4	2	0	5	24	84
Mental Health	STTO	1	1115	1	11	0	75	3	3	415	2	101	439	1202	0	0	4	0	308	5	3	176	68	20	22	2440	765	7178
		2	904	0	8	5	70	2	3	252	0	64	175	631	0	0	2	0	414	5	4	211	60	15	21	388	917	4151
		3	352	1	8	10	76	1	1	57	1	37	87	135	0	1	0	0	369	6	1	192	50	9	16	137	517	2064
	AFO	1	35	2	0	0	6	0	0	8	0	6	37	65	1	0	70	0	9	0	0	3	2	0	1	92	43	380
		2	33	1	1	0	1	0	0	3	0	2	8	20	0	0	27	0	8	0	0	3	5	1	1	33	31	178
		3	7	0	0	0	2	0	0	2	0	4	2	10	0	0	4	0	7	0	0	4	3	1	1	5	19	71
Possession Weapon	STTO	1	1164	2	71	27	271	2	7	1052	1	172	1447	3677	0	1	59	1	246	16	12	115	79	20	3	3923	845	13213
		2	969	0	66	17	182	1	5	566	1	121	484	1721	0	3	10	0	382	14	12	125	80	20	10	729	1048	6566
		3	451	1	20	22	187	0	5	102	2	70	176	371	0	1	1	0	383	9	7	112	67	9	12	213	540	2761
	AFO	1	65	8	1	3	68	0	0	20	0	29	379	547	1	0	868	0	21	0	0	6	27	0	0	601	141	2785
		2	70	2	1	0	27	0	0	11	0	12	138	264	0	1	238	0	47	0	0	5	23	13	0	206	161	1219
		3	29	0	0	0	14	0	0	4	0	10	33	75	0	0	44	0	43	0	0	6	23	3	0	29	101	414
																											Total =	88616

Table 71. Frequencies – Impact Factors * Tactics 1,2 & 3.

Ranked STTO/ AFO tactical response																				
Impact Factor: Mental Health						Impact Factor: Alcohol						Impact Factor: Drugs						Impact Factor: Possession of a Weapon					
STTO			AFO			STTO			AFO			STTO			AFO			STTO			AFO		
Rank	Tactic	*(n)*	Rank	Tactic	*(n)*	Rank	Tactic	*(n)*	Rank	Tactic	*(n)*	Rank	Tactic	*(n)*	Rank	Tactic	*(n)*	Rank	Tactic	*(n)*	Rank	Tactic	*(n)*
1	Non-comp h/cuff	2371	1	Tactical comms	130	1	Comp h/cuff	4543	1	Comp h/cuff	139	1	Comp h/cuff	7658	1	Comp h/cuff	223	1	Comp h/cuff	5769	1	Firearm aimed	1150
2	Tactical comms	2965	2	Firearm aimed	101	2	Tactical comms	4543	2	Tactical comms	138	2	Tactical comms	5084	2	Tactical comms	149	2	Tactical comms	4865	2	Comp h/cuff	886
3	U/arm skills	2199	3	Comp h/cuff	95	3	U/arm skills	3856	3	U/arm skills	116	3	U/arm skills	3511	3	U/arm skills	112	3	Non-comp h/cuff	2584	3	Tactical comms	836
4	Comp h/cuff	1968	4	U/arm skills	93	4	Non-comp h/cuff	3754	4	Non-comp h/cuff	89	4	Non-comp h/cuff	3502	4	Firearm aimed	93	4	U/arm skills	2433	4	TASER red-dot	550
5	Ground restrain	1091	5	Non-comp h/cuff	75	5	Ground restrain	1788	5	Firearm aimed	76	5	Ground restrain	1630	5	Non-comp h/cuff	66	5	TASER red-dot	2107	5	U/arm skills	403
6	TASER drawn	724	6	TASER red-dot	47	6	L/B restrain	765	6	TASER red-dot	69	6	TASER red-dot	798	6	TASER red-dot	64	6	TASER drawn	1720	6	Non-comp h/cuff	164
7	TASER red-dot	701	7	Ground restrain	24	7	TASER red-dot	687	7	Ground restrain	36	7	L/B restrain	705	7	Ground restrain	38	7	Ground restrain	1011	7	Ground restrain	111
8	L/B restrain	579	8	TASER drawn	13	8	TASER drawn	580	8	TASER fired	13	8	TASER drawn	656	8	TASER fired	14	8	TASER aimed	640	8	TASER aimed	109
9	TASER aimed	221	9	TASER fired	12	9	Other	294	9	TASER drawn	10	9	Other	300	9	TASER aimed	12	9	TASER fired	363	9	Other	73
10	TASER fired	202	10	L/B restrain	10	10	TASER aimed	187	10	L/B restrain	10	10	TASER aimed	259	10	TASER drawn	12	10	L/B restrain	352	10	TASER fired	51
11	Other	178	11	Other	10	11	TASER fired	147	11	Other	8	11	TASER fired	172	11	L/B restrain	10	11	Other	226	11	TASER drawn	35
12	Spit guard	59	12	TASER aimed	9	12	Spit guard	102	12	Shield	8	12	Baton drawn	98	12	Other	10	12	Baton drawn	157	12	L/B restrain	17
13	Shield	44	13	AEP aimed	3	13	Baton drawn	84	13	TASER aimed	7	13	Spit guard	84	13	Shield	6	13	Firearm aimed	70	13	Shield	16
14	Baton drawn	27	14	Spit guard	3	14	Baton used	39	14	Spit guard	5	14	Baton used	62	14	Spit guard	2	14	Baton used	66	14	AEP aimed	10
15	CS drawn	16	15	Shield	2	15	CS used	26	15	AEP aimed	1	15	CS drawn	36	15	AEP aimed	1	15	Shield	49	15	Baton used	3
16	Baton used	15	16	Baton drawn	1	16	CS drawn	23	16	Baton drawn	1	16	CS used	34	16	Baton drawn	1	16	CS drawn	39	16	Baton drawn	2
17	CS used	8	17	Dog bite	1	17	Shield	20	17	Baton used	1	17	Shield	19	17	Dog bite	1	17	CS used	31	17	Dog bite	1
18	TASER arced	7	18=	Baton used	0	18	TASER arced	8	18	CS used	1	18	TASER arced	10	18	Dog deploy	1	18	Spit guard	25	18	Dog deploy	1
19	TASER a/d stun	6	18=	TASER a/d stun	0	19	TASER a/d stun	5	19	TASER a/d stun	0	19	TASER d/stun	6	19=	Baton used	0	19	TASER arced	17	19	TASER a/d stun	0
20	Firearm aimed	6	18=	TASER arced	0	20	TASER d/stun	3	19	TASER arced	0	20	Firearm aimed	5	19=	TASER a/d stun	0	20	Dog deploy	5	19=	TASER arced	0
21	TASER d/stun	3	18=	TASER d/stun	0	21	Firearm aimed	3	19	TASER d/stun	0	21	TASER a/d stun	4	19=	TASER arced	0	21	TASER d/stun	4	19=	TASER d/stun	0
22	AEP aimed	2	18=	Dog deploy	0	22	Dog deploy	2	19	Dog bite	0	22	Dog deploy	1	19=	TASER d/stun	0	22	AEP aimed	3	19=	Firearm fired	0
23	Dog deploy	1	18=	Firearm fired	0	23=	AEP aimed	0	19	Dog deploy	0	23=	AEP aimed	0	19=	Firearm fired	0	23	TASER a/d stun	3	19=	CS drawn	0
24=	Dog bite	0	18=	CS drawn	0	23=	Dog bite	0	19	Firearm fired	0	23=	Dog bite	0	19=	CS drawn	0	24	Firearm fired	1	19=	CS used	0
24=	Firearm fired	0	18=	CS used	0	23=	Firearm fired	0	19	CS drawn	0	23=	Firearm fired	0	19=	CS used	0	25	Dog bite	0	19=	Spit guard	0
STTO *N* = 13393			AFO *N* = 629			STTO *N* = 21459			AFO *N* = 728			STTO *N* = 24634			AFO *N* = 815			STTO *N* = 22540			AFO *N* = 4418		

Table 72. Ranked response – Impact Factors * Tactics

Impact Factors * STTO/AFO Tactical response										
Tactic	Alcohol		ABD		Drugs		Mental Health		Poss. Weapon	
	STTO (*n*)	AFO (*n*)	STTO (*n*)	AFO (*n*)	STTO (*n*)	AFO (*n*)	STTO (*n*)	AFO (*n*)	STTO (*n*)	AFO (*n*)
Non-comp h/cuff	3754	89	398	18	3502	66	2371	75	2584	164
AEP aimed	0	1	0	0	0	1	2	3	3	10
Baton drawn	84	1	5	0	98	1	27	1	157	2
Baton used	39	1	8	0	62	0	15	0	66	3
TASER aimed	187	7	23	0	259	12	221	9	640	109
TASER a/d stun	5	0	1	0	4	0	6	0	3	0
TASER arced	8	0	1	0	10	0	7	0	17	0
TASER drawn	580	10	68	3	656	12	724	13	1720	35
TASER d/stun	3	0	1	0	6	0	3	0	4	0
TASER fired	147	13	42	9	172	14	202	12	363	51
TASER red-dot	687	69	83	10	798	64	701	47	2107	550
Comp h/cuff	4543	139	143	10	7658	223	1968	95	5769	886
Dog bite	0	0	0	1	0	1	0	1	0	1
Dog deploy	2	0	0	0	1	1	1	0	5	1
Firearm aimed	3	76	0	7	5	93	6	101	70	1150
Firearm fired	0	0	0	0	0	0	0	0	1	0
Ground restrain	1788	36	289	10	1630	38	1091	24	1011	111
CS drawn	23	0	3	0	36	0	16	0	39	0
CS used	26	1	2	0	34	0	8	0	31	0
L/B restrain	765	10	121	2	705	10	579	10	352	17
Other	294	8	29	1	300	10	178	10	226	73
Shield	20	8	4	0	19	6	44	2	49	16
Spit guard	102	5	8	0	84	2	59	3	25	0
Tactical comms	4543	138	446	15	5084	149	2965	130	4865	836
U/arm skills	3856	116	400	18	3511	112	2199	93	2433	403
Total (*n*)	21459	728	2075	104	24634	815	13393	629	22540	4418

Table 73. Ranked response – Impact Factors * Tactics

Primary Conduct		STTO		AFO	
		n	%	*n*	%
Compliant	Passive resistance	4483	10.5	443	11.8
	Compliant	14234	33.5	2151	57.1
	Verbal resistance/gestures	6033	14.2	300	8
Non-Compliant	Active resistance	8960	21.1	536	14.2
	Aggressive resistance	6858	16.1	258	6.9
	Serious or aggravated resistance	1964	4.6	76	2
Total		40568	-	3688	-

Table 74. Frequencies - Primary Conduct.

STTO/ AFO Response to Primary Conduct																											
Primary Conduct			Non-comp h/cuff	AEP aimed	Baton drawn	Baton used	TASER aimed	TASER a/d stun	TASER arced	TASER drawn	TASER d/stun	TASER fired	TASER red-dot	Comp h/cuff	Dog bite	Dog deploy	Firearm aimed	Firearm fired	Ground restraint	CS drawn	CS used	L/B restraint	Other	Shield	Spit guard	Tactical comms	Unarmed skills	Total
Tactic1	STTO	Active resist	1938	0	49	17	118	1	1	259	2	81	595	786	0	1	5	1	381	8	9	202	102	6	12	2994	1392	8960
		Aggressive resist	1449	0	37	12	46	4	3	175	4	90	319	277	0	0	4	0	527	5	7	204	68	9	30	2359	1229	6858
		Compliant	107	2	18	1	124	0	4	526	0	3	497	10058	0	1	54	0	27	6	0	47	78	4	0	2476	201	14234
		Passive resist	566	0	11	5	65	0	2	202	0	13	314	1306	0	1	8	0	68	2	0	67	52	3	1	1413	384	4483
		Serious/Agg resist	273	0	13	20	26	0	4	102	2	85	143	43	0	0	2	1	161	3	15	51	20	6	8	682	304	1964
		Verbal resist/gestures	604	0	11	0	52	0	1	217	1	6	224	2611	1	1	1	0	46	7	1	80	55	4	1	1736	373	6033
	AFO	Active resist	63	0	0	1	15	0	0	8	0	17	81	34	0	0	74	0	21	0	0	6	9	0	0	135	72	536
		Aggressive resist	32	0	1	2	5	0	0	2	0	12	24	9	0	0	17	0	19	0	1	9	5	0	3	70	47	258
		Compliant	14	6	0	1	51	0	0	14	0	0	255	680	1	0	652	0	11	0	0	7	15	0	0	385	59	2151
		Passive resist	24	3	2	0	5	0	0	0	0	3	66	72	0	0	120	0	4	0	0	3	5	0	0	93	43	443
		Serious/Agg resist	12	0	0	0	2	0	0	0	0	8	3	2	0	0	12	0	1	0	0	0	3	0	0	25	8	76
		Verbal resist/gestures	17	0	0	0	2	0	0	2	0	2	29	69	0	0	70	0	3	0	0	1	6	0	0	77	22	300
Tactic2	STTO	Active resist	1307	0	42	16	83	0	1	250	1	56	259	689	1	0	2	0	495	15	4	182	71	7	11	429	1474	5395
		Aggressive resist	1141	0	33	14	41	1	4	131	0	45	117	338	0	0	0	0	618	10	9	252	71	8	31	324	1359	4547
		Compliant	29	0	5	0	41	0	0	121	0	2	110	2090	0	1	3	0	19	3	0	28	53	1	1	419	177	3103
		Passive resist	340	0	21	4	44	0	1	127	0	7	103	637	0	2	1	0	75	3	1	45	43	1	3	235	435	2128
		Serious/Agg resist	281	0	17	13	37	1	0	81	0	59	55	78	0	0	1	0	208	2	8	87	15	5	5	88	353	1394
		Verbal resist/gestures	323	0	9	1	20	0	1	113	0	7	92	900	0	1	3	0	69	2	1	64	54	0	6	271	386	2323
	AFO	Active resist	51	0	1	1	5	0	0	6	0	5	29	29	0	0	27	0	31	0	0	4	6	1	1	31	86	314
		Aggressive resist	41	0	0	0	1	0	0	4	0	8	9	7	0	1	3	0	13	0	0	2	6	0	0	13	42	150
		Compliant	12	1	0	0	15	0	0	4	0	0	81	224	0	0	161	0	9	0	0	2	13	11	0	143	40	716
		Passive resist	11	0	0	0	6	0	0	1	0	0	17	37	0	0	33	0	11	0	0	1	7	2	0	41	47	214
		Serious/Agg resist	8	0	0	0	0	0	0	0	0	5	4	2	0	0	10	0	5	0	0	1	1	0	1	1	10	48
		Verbal resist/gestures	3	1	0	0	2	0	0	1	0	1	13	35	0	0	16	0	4	0	0	2	3	0	0	20	26	127
Tactic3	STTO	Active resist	545	0	20	13	86	0	3	43	0	32	84	191	0	0	1	0	461	7	7	127	80	0	10	190	620	2520
		Aggressive resist	489	0	11	14	62	1	4	37	0	31	64	69	0	0	0	0	619	9	8	229	61	5	32	159	700	2604
		Compliant	12	0	2	0	21	0	0	28	1	1	32	140	0	1	0	0	14	0	0	10	19	2	1	35	52	371
		Passive resist	112	0	3	3	35	0	1	19	0	3	45	103	0	0	0	0	66	2	0	31	21	1	1	50	150	646
		Serious/Agg resist	125	1	3	18	45	1	0	24	1	33	41	19	0	0	0	0	204	6	4	93	24	3	11	53	211	920
		Verbal resist/gestures	89	0	3	1	19	0	0	21	0	4	18	108	1	0	0	0	52	1	0	27	29	0	4	46	143	566
	AFO	Active resist	23	0	0	0	3	0	0	1	0	4	6	20	0	0	7	0	24	0	0	2	8	0	0	3	44	145
		Aggressive resist	15	0	0	0	4	0	0	1	0	4	1	4	0	0	1	0	16	0	0	2	2	0	1	5	19	75
		Compliant	5	0	0	0	5	0	0	2	0	0	19	52	0	0	29	0	11	0	0	3	5	2	0	15	27	175
		Passive resist	7	0	0	1	2	0	0	0	0	0	6	12	0	0	6	0	5	0	0	2	3	1	0	17	23	85
		Serious/Agg resist	0	0	0	1	0	0	0	1	0	5	2	1	0	0	1	0	4	0	0	0	4	0	0	2	6	27
		Verbal resist/gestures	3	0	0	0	1	0	0	1	0	2	1	6	0	0	2	0	4	0	0	1	4	0	0	2	10	37
																											Total =	74926

Table 75. Frequencies - Primary Conduct * Tactical Option.

STTO/ AFO ranked response to Primary Conduct

Rank	STTO											
	Active resist		Aggressive resist		Compliant		Passive resist		Serious/Agg resist		Verbal resist/gestures	
1	Non-comp h/cuff	3790	Unarmed skills	3288	Comp h/cuff	12288	Comp h/cuff	2046	Unarmed skills	868	Comp h/cuff	3619
2	Tactical comms	3613	Non-comp h/cuff	3079	Tactical comms	2930	Tactical comms	1698	Tactical comms	823	Tactical comms	2053
3	Unarmed skills	3486	Tactical comms	2842	TASER drawn	675	Non-comp h/cuff	1018	Non-comp h/cuff	679	Non-comp h/cuff	1016
4	Comp h/cuff	1666	Ground restraint	1764	TASER red-dot	639	Unarmed skills	969	Ground restraint	573	Unarmed skills	902
5	Ground restraint	1337	L/B restraint	685	Unarmed skills	430	TASER red-dot	462	TASER red-dot	239	TASER drawn	351
6	TASER red-dot	938	Comp h/cuff	684	TASER aimed	186	TASER drawn	348	L/B restraint	231	TASER red-dot	334
7	TASER drawn	552	TASER red-dot	500	Other	150	Ground restraint	209	TASER drawn	207	L/B restraint	171
8	L/B restraint	511	TASER drawn	343	Non-comp h/cuff	148	TASER aimed	144	TASER fired	177	Ground restraint	167
9	TASER aimed	287	Other	200	L/B restraint	85	L/B restraint	143	Comp h/cuff	140	Other	138
10	Other	253	TASER fired	166	Ground restraint	60	Other	116	TASER aimed	108	TASER aimed	91
11	TASER fired	169	TASER aimed	149	Firearm aimed	57	Baton drawn	35	Other	59	Baton drawn	23
12	Baton drawn	111	Spit guard	93	Baton drawn	25	TASER fired	23	Baton used	51	TASER fired	17
13	Baton used	46	Baton drawn	81	CS drawn	9	Baton used	12	Baton drawn	33	Spit guard	11
14	Spit guard	33	Baton used	40	Shield	7	Firearm aimed	9	CS used	27	CS drawn	10
15	CS drawn	30	CS drawn	24	TASER fired	6	CS drawn	7	Spit guard	24	Firearm aimed	4
16	CS used	20	CS used	24	TASER arced	4	Shield	5	Shield	14	Shield	4
17	Shield	13	Shield	22	Dog deploy	3	Spit guard	5	CS drawn	11	Baton used	2
18	Firearm aimed	8	TASER arced	11	AEP aimed	2	TASER arced	4	TASER arced	4	TASER arced	2
19	TASER arced	5	TASER a/d stun	6	Spit guard	2	Dog deploy	3	TASER d/stun	3	Dog bite	2
20	TASER d/stun	3	TASER d/stun	4	Baton used	1	CS used	1	Firearm aimed	3	Dog deploy	2
21	TASER a/d stun	1	Firearm aimed	4	TASER d/stun	1	AEP aimed	0	TASER a/d stun	2	CS used	2
22	Dog bite	1	AEP aimed	0	TASER a/d stun	0	TASER a/d stun	0	AEP aimed	1	TASER d/stun	1
23	Dog deploy	1	Dog bite	0	Dog bite	0	TASER d/stun	0	Firearm fired	1	AEP aimed	0
24	Firearm fired	1	Dog deploy	0	Firearm fired	0	Dog bite	0	Dog bite	0	TASER a/d stun	0
25	AEP aimed	0	Firearm fired	0	CS used	0	Firearm fired	0	Dog deploy	0	Firearm fired	0
		N= 16875		*N*= 14009		*N*= 17708		*N*= 7257		*N*= 4278		*N*= 8922

Rank	AFO											
	Active resist		Aggressive resist		Compliant		Passive resist		Serious/Agg resist		Verbal resist/gestures	
1	Unarmed skills	202	Unarmed skills	108	Comp h/cuff	956	Firearm aimed	159	Tactical comms	28	Comp h/cuff	110
2	Tactical comms	169	Non-comp h/cuff	88	Firearm aimed	842	Tactical comms	151	Unarmed skills	24	Tactical comms	99
3	Non-comp h/cuff	137	Tactical comms	88	Tactical comms	543	Comp h/cuff	121	Firearm aimed	23	Firearm aimed	88
4	TASER red-dot	116	Ground restraint	48	TASER red-dot	355	Unarmed skills	113	Non-comp h/cuff	20	Unarmed skills	58
5	Firearm aimed	108	TASER red-dot	34	Unarmed skills	126	TASER red-dot	89	TASER fired	18	TASER red-dot	43
6	Comp h/cuff	83	TASER fired	24	TASER aimed	71	Non-comp h/cuff	42	Ground restraint	10	Non-comp h/cuff	23
7	Ground restraint	76	Firearm aimed	21	Other	33	Ground restraint	20	TASER red-dot	9	Other	13
8	TASER fired	26	Comp h/cuff	20	Non-comp h/cuff	31	Other	15	Other	8	Ground restraint	11
9	TASER aimed	23	L/B restraint	13	Ground restraint	31	TASER aimed	13	Comp h/cuff	5	TASER aimed	5
10	Other	23	Other	13	TASER drawn	20	L/B restraint	6	TASER aimed	2	TASER fired	5
11	TASER drawn	15	TASER aimed	10	Shield	13	AEP aimed	3	Baton used	1	TASER drawn	4
12	L/B restraint	12	TASER drawn	7	L/B restraint	12	TASER fired	3	TASER drawn	1	L/B restraint	4
13	Baton used	2	Spit guard	4	AEP aimed	7	Shield	3	L/B restraint	1	AEP aimed	1
14	Baton drawn	1	Baton used	2	Baton used	1	Baton drawn	2	Spit guard	1	Baton drawn	0
15	Shield	1	Baton drawn	1	Dog bite	1	Baton used	1	AEP aimed	0	Baton used	0
16	Spit guard	1	Dog deploy	1	Baton drawn	0	TASER drawn	1	Baton drawn	0	TASER a/d stun	0
17	AEP aimed	0	CS used	1	TASER a/d stun	0	TASER a/d stun	0	TASER a/d stun	0	TASER arced	0
18=	TASER a/d stun	0	AEP aimed	0	TASER arced	0	TASER arced	0	TASER arced	0	TASER d/stun	0
18=	TASER arced	0	TASER a/d stun	0	TASER d/stun	0	TASER d/stun	0	TASER d/stun	0	Dog bite	0
18=	TASER d/stun	0	TASER arced	0	TASER fired	0	Dog bite	0	Dog bite	0	Dog deploy	0
18=	Dog bite	0	TASER d/stun	0	Dog deploy	0	Dog deploy	0	Dog deploy	0	Firearm fired	0
18=	Dog deploy	0	Dog bite	0	Firearm fired	0	Firearm fired	0	Firearm fired	0	CS drawn	0
18=	Firearm fired	0	Firearm fired	0	CS drawn	0	CS drawn	0	CS drawn	0	CS used	0
18=	CS drawn	0	CS drawn	0	CS used	0	CS used	0	CS used	0	Shield	0
18=	CS used	0	Shield	0	Spit guard	0	Spit guard	0	Shield	0	Spit guard	0
		N= 995		*N*= 483		*N*= 3042		*N*= 742		*N*= 151		*N*= 464

Table 76. Ranked - Primary Conduct * Tactical Option

Reason for Force: Protect self				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	32662	76.8	3436	91.3
No	9870	23.2	328	8.7
Total	42532	100	3764	100

Reason for Force: Protect Other Officers				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	28774	67.7	3180	84.5
No	13758	32.3	584	15.5
Total	42532	100	3764	100

Reason for Force: Protect Public				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	16992	40	2766	73.5
No	25540	60	998	26.5
Total	42532	100	3764	100

Reason for Force: Prevent Offence				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	19747	46.4	2310	61.4
No	22785	53.6	1454	38.6
Total	42532	100	3764	100

Reason for Force: Protect Subject				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	18028	42.4	1857	49.3
No	24504	57.6	1907	50.7
Total	42532	100	3764	100

Reason for Force: Secure Evidence				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	15142	35.6	2118	56.3
No	27390	64.4	1646	43.7
Total	42532	100	3764	100

Reason for Force: Effect Search				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	17528	41.2	2089	55.5
No	25004	58.8	1675	44.5
Total	42532	100	3764	100

Reason for Force: Remove Handcuffs				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	1778	4.2	51	1.4
No	40754	95.8	3713	98.6
Total	42532	100	3764	100

Reason for Force: Effect Arrest				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	23815	56	2198	58.4
No	18717	44	1566	41.6
Total	42532	100	3764	100

Reason for Force: Prevent Harm				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	17241	40.5	1645	43.7
No	25291	59.5	2119	56.3
Total	42532	100	3764	100

Reason for Force: Method of Entry				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	1212	2.8	210	5.6
No	41320	97.2	3554	94.4
Total	42532	100	3764	100

Reason for Force: Prevent Escape				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	24450	57.5	2248	59.7
No	18082	42.5	1516	40.3
Total	42532	100	3764	100

Reason for Force: Other				
	STTO		AFO	
	Frequency	Percent	Frequency	Percent
Yes	86	0.2	4	0.1
No	42446	99.8	3760	99.9
Total	42532	100	3764	100

Table 77. Frequencies- Reason for Force

Reason for Force	MH		Alcohol		Drugs		ABD		Weapon	
	STTO	AFO	STTO	AFO	STTO	AFO	STTO	AFO	STTO	AFO
	(*n*)	(*n*)	(*n*)	(*n*)	(*n*)	(*n*)	(*n*)	(*n*)	(*n*)	(*n*)
Protect self	6153	352	10045	383	11284	431	860	56	11951	2694
Protect Public	3575	286	5780	294	5687	315	605	47	7183	2298
Protect Subject	5189	264	6099	252	6942	273	750	43	6143	1483
Protect Other Officers	5089	328	9134	357	10015	392	851	55	10731	2551
Prevent Offence	3272	239	6087	264	7829	314	539	39	7613	1855
Secure Evidence	1194	172	2372	185	7463	312	187	24	6937	1806
Effect Search	1641	176	3207	179	8309	290	229	22	7623	1766
Effect Arrest	3252	236	7566	275	7856	315	420	35	7425	1683
Method of Entry	274	31	204	17	542	29	43	3	705	185
Remove H/Cuffs	402	9	707	17	890	16	87	0	488	32
Prevent Harm	4616	246	5917	225	6270	239	703	42	6898	1321
Prevent Escape	3636	225	6352	245	9294	331	568	37	8383	1701
Other	13	0	20	0	7	0	0	0	5	0
Total	38306	2564	63490	2693	82388	3257	5842	403	82085	19375

Table 78. Frequencies- Reason for Force * Impact

Reason for Force	Chi-Sq		(*n*)	
	STTO	AFO	STTO	AFO
Protect self	12213.8	2566.33	40293	3916
Protect Public	1717.96	830.453	22830	3240
Protect Subject	986.048	0.664	25123	2315
Protect Other Officers	5301.43	1790.44	35820	3683
Prevent Offence	217	194.67	25340	2711
Secure Evidence	3527.07	59.188	18153	2499
Effect Search	1314.08	45.536	21009	2433
Effect Arrest	611.06	106.117	26519	2544
Method of Entry	37822.2	2970.87	1768	265
Remove H/Cuffs	35717.3	3562.76	2574	74
Prevent Harm	1523.62	59.691	24404	2073
Prevent Escape	953.433	142.355	28233	2539
Other	42188.7	3748.02	45	0

(Note: All significant at $p < .001$, $df = 12$)

Table 79. Chi-Square test Reason for Force.

STTO/AFO ranked Reason for Force																
Rank	MH				Alcohol				Drugs				Weapon			
	STTO		AFO		STTO		AFO		STTO		AFO		STTO		AFO	
1	Protect self	6153	Protect self	352	Protect self	10045	Protect self	383	Protect self	11284	Protect self	431	Protect self	11951	Protect self	2694
2	Protect Subject	5189	Protect Other Officers	328	Protect Other Officers	9134	Protect Other Officers	357	Protect Other Officers	10015	Protect Other Officers	392	Protect Other Officers	10731	Protect Other Officers	2551
3	Protect Other Officers	5089	Protect Public	286	Effect Arrest	7566	Protect Public	294	Prevent Escape	9294	Prevent Escape	331	Prevent Escape	8383	Protect Public	2298
4	Prevent Harm	4616	Protect Subject	264	Prevent Escape	6352	Effect Arrest	275	Effect Search	8309	Protect Public	315	Effect Search	7623	Prevent Offence	1855
5	Prevent Escape	3636	Prevent Harm	246	Protect Subject	6099	Prevent Offence	264	Effect Arrest	7856	Effect Arrest	315	Prevent Offence	7613	Secure Evidence	1806
6	Protect Public	3575	Prevent Offence	239	Prevent Offence	6087	Protect Subject	252	Prevent Offence	7829	Prevent Offence	314	Effect Arrest	7425	Effect Search	1766
7	Prevent Offence	3272	Effect Arrest	236	Prevent Harm	5917	Prevent Escape	245	Secure Evidence	7463	Secure Evidence	312	Protect Public	7183	Prevent Escape	1701
8	Effect Arrest	3252	Prevent Escape	225	Protect Public	5780	Prevent Harm	225	Protect Subject	6942	Effect Search	290	Secure Evidence	6937	Effect Arrest	1683
9	Effect Search	1641	Effect Search	176	Effect Search	3207	Secure Evidence	185	Prevent Harm	6270	Protect Subject	273	Prevent Harm	6898	Protect Subject	1483
10	Secure Evidence	1194	Secure Evidence	172	Secure Evidence	2372	Effect Search	179	Protect Public	5687	Prevent Harm	239	Protect Subject	6143	Prevent Harm	1321
11	Remove H/Cuffs	402	Method of Entry	31	Remove H/Cuffs	707	Method of Entry	17	Remove H/Cuffs	890	Method of Entry	29	Method of Entry	705	Method of Entry	185
12	Method of Entry	274	Remove H/Cuffs	9	Method of Entry	204	Remove H/Cuffs	17	Method of Entry	542	Remove H/Cuffs	16	Remove H/Cuffs	488	Remove H/Cuffs	32
13	Other	13	Other	0	Other	20	Other	0	Other	7	Other	0	Other	5	Other	0

Table 80. Ranked - Reason for Force * Tactical Option.

Tactic	Tactic1								Tactic2								Tactic3								Tactic4							
	STTO				AFO				STTO				AFO				STTO				AFO				STTO				AFO			
	Yes	No	%	Total	Yes	No	%	Total	Yes	No	%	Total	Yes	No	%	Total	Yes	No	%	Total	Yes	No	%	Total	Yes	No	%	Total	Yes	No	%	Total
Non-compliant handcuffing	4688	249	95%	4937	160	2	99%	162	3059	362	89%	3421	119	7	94%	126	1276	96	93%	1372	50	3	94%	53	377	19	95%	396	19	0	100%	19
AEP aimed	2	0	100%	2	8	1	89%	9	0	0	0%	0	2	0	100%	2	1	0	100%	1	0	0	0%	0	4	5	44%	9	0	0	0%	0
Baton drawn	100	39	72%	139	3	0	100%	3	79	48	62%	127	1	0	100%	1	33	9	79%	42	0	0	0%	0	10	7	59%	17	0	0	0%	0
Baton used	41	14	75%	55	4	0	100%	4	33	15	69%	48	1	0	100%	1	30	19	61%	49	2	0	100%	2	23	24	49%	47	0	0	0%	0
CED (Taser) aimed	390	41	90%	431	77	3	96%	80	191	75	72%	266	28	1	97%	29	120	148	45%	268	10	5	67%	15	0	1	0%	1	1	1	50%	2
CED (Taser) angle drive stun	4	1	80%	5	0	0	0%	0	2	0	100%	2	0	0	0%	0	2	0	100%	2	0	0	0%	0	3	4	43%	7	0	0	0%	0
CED (Taser) arced	13	2	87%	15	0	0	0%	0	7	0	100%	7	0	0	0%	0	4	4	50%	8	0	0	0%	0	27	28	49%	55	0	0	0%	0
CED (Taser) drawn	1204	277	81%	1481	23	3	88%	26	463	360	56%	823	10	6	63%	16	106	66	62%	172	4	2	67%	6	1	0	100%	1	0	1	0%	1
CED (Taser) drive stun	9	0	100%	9	0	0	0%	0	1	0	100%	1	0	0	0%	0	1	1	50%	2	0	0	0%	0	39	39	50%	78	0	0	0%	0
CED (Taser) fired	160	118	58%	278	32	10	76%	42	90	86	51%	176	15	4	79%	19	60	44	58%	104	11	4	73%	15	133	82	62%	215	3	0	100%	3
CED (Taser) red-dotted	1912	180	91%	2092	448	10	98%	458	616	120	84%	736	138	15	90%	153	220	64	77%	284	35	0	100%	35	136	5	96%	141	7	3	70%	10
Compliant handcuffing	14924	157	99%	15081	858	8	99%	866	4274	458	90%	4732	330	4	99%	334	613	17	97%	630	94	1	99%	95	0	0	0%	0	33	0	100%	33
Dog bite	1	0	100%	1	1	0	100%	1	1	0	100%	1	0	0	0%	0	1	0	100%	1	0	0	0%	0	0	0	0%	0	1	0	100%	1
Dog deployed	4	0	100%	4	0	0	0%	0	4	0	100%	4	1	0	100%	1	1	0	100%	1	0	0	0%	0	0	0	0%	0	0	0	0%	0
Firearm aimed	73	1	99%	74	921	24	97%	945	10	0	100%	10	239	11	96%	250	0	1	0%	1	43	3	93%	46	0	0	0%	0	14	0	100%	14
Firearm fired	2	0	100%	2	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0	0	0	0%	0
Ground restraint	1164	46	96%	1210	58	1	98%	59	1396	88	94%	1484	73	0	100%	73	1335	81	94%	1416	62	2	97%	64	642	38	94%	680	32	0	100%	32
Irritant spray - CS drawn	26	5	84%	31	0	0	0%	0	18	17	51%	35	0	0	0%	0	13	12	52%	25	0	0	0%	0	5	9	36%	14	0	0	0%	0
Irritant spray - CS used	23	9	72%	32	0	0	0%	0	14	9	61%	23	0	0	0%	0	15	4	79%	19	0	0	0%	0	6	4	60%	10	0	0	0%	0
Limb/body restraints	626	25	96%	651	0	1	0%	1	603	55	92%	658	12	0	100%	12	492	25	95%	517	10	0	100%	10	297	20	94%	317	6	0	100%	6
Other/improvised	355	20	95%	375	25	1	96%	26	284	23	93%	307	34	2	94%	36	219	15	94%	234	25	1	96%	26	138	6	96%	144	6	1	86%	7
Shield	31	1	97%	32	39	4	91%	43	20	2	91%	22	14	0	100%	14	8	3	73%	11	3	0	100%	3	4	1	80%	5	0	0	0%	0
Spit guard	52	0	100%	52	3	0	100%	3	57	0	100%	57	2	0	100%	2	57	2	97%	59	1	0	100%	1	51	2	96%	53	0	0	0%	0
Tactical communications	4114	7546	35%	11660	565	220	72%	785	1154	612	65%	1766	224	25	90%	249	285	248	53%	533	39	5	89%	44	88	94	48%	182	7	1	88%	8
Unarmed skills	3631	252	94%	3883	244	7	97%	251	3597	587	86%	4184	233	18	93%	251	1683	193	90%	1876	126	3	98%	129	445	63	88%	508	23	2	92%	25
	33549	8983	79%	42532	3469	295	92%	3764	15973	2917	85%	18890	1476	93	94%	1569	6575	1052	86%	7627	515	29	95%	544	2429	451	84%	2880	152	9	94%	161

Table 81. Frequencies - Tactical Options 1,2 & 3.

	STTO		AFO		Spearman coefficient($r_{s)}$	
	Effective %	Cumulative %	Effective %	Cumulative %	Y	N
Tactic 1	58.10%	58.10%	61.90%	61.90%	0.737	0.650
Tactic 2	25.80%	83.90%	25.80%	87.70%	0.779	0.698
Tactic 3	10.42%	94.32%	8.95%	96.65%	0.767	0.696
Tactic 4	3.93%	98.25%	2.65%	99.29%	0.390	0.114

Table 82. Tactical Options 1 to 4 – Culminative percentage and Spearman Correlation.

Appendix I. Hendy (2018) Interview research questions

IVQ1: What kinds of incidents give you the most satisfaction as a police officer? What is it about these incidents that makes them satisfying?[8]

IVQ2: When you are on patrol, either on foot or in a vehicle, what type of event would cause you to stop and intervene?

IVQ3: Do you see any differences in the way you attempt to resolve conflict compared to the way other officers you work with?

IVQ4: How did you learn to resolve conflict when dealing with members of the public?

IVQ5: Describe an encounter where you witnessed effective conflict resolution tactics being used. (This can be either your own encounter or an encounter you have observed).

IVQ6: Describe an encounter where you witnessed ineffective conflict resolution tactics used. (This can be either your own encounter or an encounter you have observed).

IVQ7: From time to time, police officers run into situations where someone is a bully. What do you think is the best way to deal with a bully?

IVQ8: When thinking about when you attempt to resolve conflict, please provide an example when you think it would be appropriate to use communication tactics (such as talking) and when it would be appropriate to use coercive tactics (such as physical force)?

Source: Hendy (2018, pp. 62-63).